Steve W. Berman (*pro hac vice*)
HAGENS BERMAN SOBOL SHAPIRO LLP
1301 Second Avenue Suite 2000
Seattle, WA 98101
Telephone: (206) 623-7292
Facsimile: (206) 623-0594
steve@hbsslaw.com

Ben M. Harrington (SBN 313877)
HAGENS BERMAN SOBOL SHAPIRO LLP
715 Hearst Avenue, Suite 202
Berkeley, CA 94710
Telephone: (510) 725-3000
Facsimile: (510) 725-3001
benh@hbsslaw.com

Eamon P. Kelly (*pro hac vice*)
Joseph M. Vanek (*pro hac vice*)
Jeffrey H. Bergman (*pro hac vice*)
SPERLING & SLATER, P.C.
55 W. Monroe Street, 32nd Floor
Chicago, IL 60603
Telephone: (312) 676-5845
Facsimile: (312) 641-6492
ekelly@sperling-law.com
jvanek@sperling-law.com
jbergman@sperling-law.com

Attorneys for Plaintiffs and the Proposed Class

UNITED STATES DISTRICT COURT

NORTHERN DISTRICT OF CALIFORNIA

OAKLAND DIVISION

AFFINITY CREDIT UNION, GREENSTATE CREDIT UNION, and CONSUMERS CO-OP CREDIT UNION,

Plaintiffs,

v.

APPLE INC., a California corporation,

Defendant.

No. 4:22-cv-4174-JSW

AMENDED CLASS ACTION COMPLAINT FOR VIOLATION OF THE SHERMAN ACT AND CLAYTON ACT

DEMAND FOR JURY TRIAL

TABLE OF CONTENTS

For their suit against Defendant Apple Inc., Plaintiffs Affinity Credit Union, GreenState Credit Union, and Consumers Co-Op Credit Union (together, "Plaintiffs"), on their own behalf and that of all similarly situated payment card issuers, allege as follows:

I. INTRODUCTION

1. Smart mobile devices have transformed the way people interact with the world around them. This transformation launched an array of digital products and services that, while unfathomable two decades ago, are now ubiquitous in daily life. Among these services are mobile wallets that allow consumers to make payments with just their mobile device. Using mobile wallets, consumers can store credit and other payment cards on their mobile devices and, with a mere tap at the point-of-sale, send a secure payment to the merchant. This is accomplished through a technology known as "Near Field Communication" or "NFC." With an NFC chip, any smart device can send a wireless signal to an NFC-enabled payment terminal from close proximity. More than 90 percent of U.S. retailers accept mobile wallets, and at least 70% of Americans use them.[1] It is a trillion dollar industry, and it is growing exponentially.

2. Apple is the leading manufacturer of mobile devices, including smartphones, tablets and smart watches. But Apple is not content to dominate these mobile device markets. Instead, it exercises its market power in the device markets by requiring that consumers of its mobile devices also acquire its mobile wallet—Apple Pay—and prevents consumers from using competing mobile wallets capable of offering competing tap-and-pay solutions.

3. In comparison, on non-Apple mobile devices, consumers have a selection of competing wallets to choose from. Google Pay and Samsung Pay are the leaders. Mobile device manufacturers using the Android OS do not restrict access to NFC technology on their devices—it is available for use to all comers, including digital wallets that compete with Google's digital wallet, Google Pay.

[1] *See* Alex Clere, "75% of consumers now using mobile wallets – survey," FINTECH (May 27, 2022) https://fintechmagazine.com/digital-payments/75-of-consumers-now-using-mobile-wallets-survey.

4. In contrast to the Android ecosystem, there is only one tap-and-pay mobile wallet that can be used on Apple's iOS devices (iPhone, iPad and Apple Watch).[2] The only option is Apple Pay, Apple's own proprietary service. Apple did not secure preeminence for Apple Pay by building a better product. Apple Pay is mostly indistinguishable from Google Pay and Samsung Pay from a functionality standpoint. Rather, Apple propped up Apple Pay by requiring iOS users to use its Apple Pay service exclusively for tap-and-pay mobile wallet transactions, barring all would-be and free competitors from accessing the NFC interface needed to compete.

5. Having barred all competitors from its devices, Apple charges payment card issuers fees that no other mobile wallet ventures to impose. Whenever an Apple Pay transaction is completed on a U.S. issuer's payment card, the issuer must pay Apple a fee—15 basis points on credit (0.15%) and a flat 0.5 cents ($0.005) on debit. These fees generated a reported $1 billion for Apple in 2019, and this revenue stream—earned from card issuers—is predicted to quadruple by 2023.

6. Apple's issuer fees are manifestly supracompetitive and the result of the anticompetitive conduct alleged herein. In the Android ecosystem, where multiple digital wallets compete, there are no issuer fees whatsoever. The upshot is that card issuers—the proposed class here—pay a reported $1 billion annually in fees on Apple Pay and $0 for accessing functionally identical Android wallets. If Apple faced competition, it could not sustain these substantial fees. Alternative mobile wallets, including Google Pay, would be downloaded onto iOS devices, and card issuers would agree to make their cards available on those substitute mobile wallets at zero cost and would not agree to make their cards available on Apple Pay unless and until Apple reduced its price to the competitive level.

7. Apple has further cemented its market power by preventing all US-based card issuers from passing on Apple Pay's fees to consumers. That is, to participate in Apple Pay, an issuer must

[2] The operating systems for iPad and Apple Watch have been branded iPad OS and watchOS, respectively, but they are both derived from iOS and share many of the same core features. For ease of reference, the term "iOS" in this amended complaint refers to the operating systems for iPhone, iPad and Apple Watch collectively.

agree not to charge its cardholders for Apple Pay transactions. This restraint prevents issuers from using differential pricing to drive cardholders to lower cost alternative modes of payment. Card issuers would not agree to such a restriction but for Apple's market power.

8. Apple Pay can also be used to make e-commerce payments online and within apps. But critically, issuers cannot disable the e-commerce function, nor negotiate a different fee on those transactions. Apple bundles the "e-commerce" functionality with the "tap-and-pay" service and requires that issuers who accept the latter also accept the former. As with tap-and-pay, when a user completes an Apple Pay transaction in e-commerce, members of the class must pay the same supracompetitive charges to Apple. Thus, even though Apple's exclusionary conduct—i.e., the restriction on the use of NFC technology—operates on point-of-sale transactions, Apple, by bundling its tap-and-pay and e-commerce services, can extract the same monopoly rents on transactions in e-commerce. This compounds the injury card issuers suffer.

9. Apple Pay's practices have drawn increased scrutiny from antitrust authorities. After completing a preliminary investigation, the European Commission issued Apple a statement of objections on May 2, 2022. Targeting the same practices challenged by this amended complaint, the European Commission stated that it "takes issue with the decision by Apple to prevent mobile wallets app developers, from accessing the necessary hardware and software ('NFC input') on its devices, to benefit its own solution, Apple Pay." The European Commission announced its preliminary view that Apple Pay's restrictions on NFC likely violate European competition law and have "an exclusionary effect on competitors and lead[] to less innovation and less choice for consumers for mobile wallets on iPhones." This same loss of innovation and choice is present here in the United States as well.

10. Here in the United States, Apple Pay violates the Sherman Act in at least two ways. ***First***, Apple has unlawfully "tied" two of its products together—namely, its mobile devices and its mobile wallet—by compelling iOS users to use its mobile wallet product exclusively and foreclosing rival iOS tap-and-pay solutions. Apple has market power in each of the device markets for smartphones, tablets and smart watches. If a consumer purchases an iOS device in any of these markets, that consumer also receives the Apple Pay service and must agree to Apple Pay's terms and

conditions. Furthermore, if that consumer wishes to use a tap-and-pay mobile wallet, that consumer must exclusively use Apple Pay to fulfill its requirement. While this tie negates consumer choice, the economic injury is suffered by Plaintiffs and other payment card issuers (the class here), because Apple forces issuers to pay its supracompetitive fee on each transaction. Apple's tie is per se unlawful under the Sherman Act. And Plaintiffs have standing to challenge the tie because they suffer the economic injury that flows directly from it.

11. ***Second***, by foreclosing all competitors, Apple unlawfully monopolizes (and has attempted to monopolize) the market for tap-and-pay mobile wallets on iOS (hereinafter, the "Tap-and-Pay iOS Mobile Wallets Market"). This is a relevant antitrust market, technically an "aftermarket" to the foremarkets in which Apple's mobile devices compete (markets for smartphones, tablets and smart watches). Apple Pay charges a substantial premium over all conceivable aftermarket substitutes, yet demand remains inelastic. As noted, issuers pay $0 to Google when their cardholders use wallets on Android OS mobile devices, but the issuers cannot switch to iOS versions of Google Pay or Samsung Pay to reach iOS device owners. Furthermore, issuers pay $0 when their cardholders use contactless cards. If these or other payment forms were substitutes, without significant quality differentiation, demand would have shifted to them in response to Apple Pay's fees. It has not. Instead, issuer acceptance of Apple Pay increases every year. That Apple has profitably sustained its significant issuer fees, despite other free forms of payment, demonstrates that a hypothetical monopolist can (and has been able to) profitably impose a small but significant non-transitory increase in price (a SSNIP).[3] Those alternative payment forms are therefore not in the same relevant antitrust market.

12. As a result of Apple's exclusionary conduct, Plaintiffs and other issuers pay, and have paid, fees they would not have incurred in a competitive market and have been forced to agree to contractual restraints that they would not otherwise agree to. But that is not the extent of the harm. If there were multiple Tap-and-Pay iOS Mobile Wallets, the competing firms would need to innovate

[3] *See* U.S. DEPARTMENT OF JUSTICE, HORIZONTAL MERGER GUIDELINES (2010), https://www.justice.gov/atr/horizontal-merger-guidelines-08192010 (last accessed Oct. 28, 2022).

to differentiate their offerings, for example by improving the security of transactions. Consumers and issuers have been deprived of that innovation and differentiated choice among market alternatives. Competition would also increase output, because even more issuers would enroll in Tap-and-Pay iOS Mobile Wallets if the cost of doing so were lower, thus increasing the number of cards enabled for the service, the number of merchants that accept those cards, and the number of transactions within the market.

13. With this action, Plaintiffs seek to hold Apple accountable. On behalf of a proposed class of issuers—including banks, credit unions, and other institutions offering payment cards enabled for Apple Pay—Plaintiffs seek monetary relief, injunctive relief, and all other relief available to stop Apple's ongoing anticompetitive practices and redress the harm they have caused.

II. JURISDICTION AND VENUE

14. This Court has subject matter jurisdiction over this action under 28 U.S.C. § 1331 because Plaintiffs allege violations of federal law, namely, the Sherman Act.

15. This Court has personal jurisdiction over Defendant Apple, which is headquartered in this District. Apple has engaged in sufficient minimum contacts with the United States, this judicial district, and this State, and it has intentionally availed itself of the laws of the United States and this State by conducting a substantial amount of business throughout the State.

16. This judicial district is a proper venue because Apple resides in this District and transacts affairs in this District. A substantial part of the events giving rise to Plaintiffs' claims occurred in this District.

III. PARTIES

17. **Plaintiff Affinity Credit Union** ("Affinity") is an Iowa chartered credit union with its principal place of business in Des Moines, Iowa. Affinity issues payment cards and is an Apple Pay participating financial institution. As a participating financial institution, Affinity is required to agree to Apple's anticompetitive terms and to pay Apple's supracompetitive issuer transaction fees on each Apple Pay transaction processed using an Affinity-issued payment card. Affinity has paid and continues to pay Apple's supracompetitive issuer-transaction fees.

18. **Plaintiff GreenState Credit Union** ("GreenState") is an Iowa-chartered credit union with its principal place of business in North Liberty, Iowa. GreenState issues payment cards and is an Apple Pay-participating financial institution. As a participating financial institution, GreenState is required to agree to Apple's anticompetitive terms and to pay Apple's supracompetitive issuer-transaction fees on each Apple Pay transaction processed using a GreenState-issued payment card. GreenState has paid and continues to pay Apple's supracompetitive issuer-transaction fees.

19. **Plaintiff Consumers Co-Op Credit Union** ("Consumers") is an Illinois-chartered credit union with its principal place of business in Gurnee, Illinois. Consumers issues payment cards and is an Apple Pay participating financial institution. As a participating financial institution, Consumers is required to agree to Apple's anticompetitive terms and to pay Apple's supracompetitive issuer-transaction fees on each Apple Pay transaction processed using a Consumers-issued payment card. Consumers has paid and continues to pay Apple's supracompetitive issuer-transaction fees.

20. **Defendant Apple** designs, manufactures and markets smartphones, personal computers, tablets, and smart watches, and sells a variety of services, including Apple Pay. Apple maintains its headquarters and principal place of business in Cupertino, California.

IV. RELEVANT FACTS

A. Apple Has Market Power in the U.S. Markets for Smartphones, Tablets and Smart Watches.

21. Apple Pay is available on three Apple mobile devices—the iPhone, iPad and Apple Watch. While these devices are integrated in some respects, they are distinct products operating in distinct markets, with Apple holding market power in each. Each is a product market. *See Newcal Industries, Inc.*, 513 F.3d 1038, 1045 (9th Cir. 2008).

1. The Smartphone Product Market

22. Smartphones are a singular device that has transformed the way people interact with the world around them. They allow people to access the internet anytime and anywhere with a cellular or Wi-Fi connection. Smartphones also provide access to apps with a staggering range of

functionality. With a smartphone in hand, consumers can shop online, navigate a city, post on social media, buy movie tickets, check the weather, and so much more. While it has ceased to be their primary function, smartphones are also mobile telephones. Apple and other smartphone manufacturers treat smartphones as a distinct product line, both in marketing materials and public filings.[4] There is widespread industry and public recognition of a distinct market for smartphones.[5]

23. There is no reasonably close substitute for the smartphone. *See Newcal*, 513 F.3d at 1045. Various devices can provide some piece of a smartphone's functionality, but none provide a substantial share. Landline phones enable phone calls, but not on the move, and they do not offer the other features smartphones provide. Cellphones (that are not smartphones) provide mobility, but not internet access or any of the other features of a smartphone. Personal computers (including laptops) provide internet access and computing functions, and sometimes phone applications, but they are not as portable as a smartphone, and generally do not have cellular access. That consumers typically own a smartphone along with these and other electronic devices shows that the products are compliments, not substitutes.

24. The absence of close substitutes in part explains the ubiquitous adoption of smartphones. As of 2021, approximately 85% of adults in the U.S. owned a smartphone.[6]

25. Apple enjoys market power in the U.S. smartphone product market. The iPhone, first launched in 2007, is the leading smartphone in the U.S. As of June 2022, iPhones had a 57% market share. The next closest competitor (Samsung) has a 29% share, and after that competitor shares dip into the single digits.[7]

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[4] *See* Apple Inc. 2022 Form 10-K at 1 (listing iPhone as a distinct product line, separate from other Apple offerings).

[5] *See, e.g.,* Igor Bonifacic, "iPhone overtakes Android to Claim Majority of US Smartphone Market," ENGADGET (Sept. 3, 2022), https://www.engadget.com/iphone-overtakes-android-us-market-share-223251196.html.

[6] *See* "Demographics of Mobile Device Ownership and Adoption in the United States," PEW RESEARCH CENTER (Apr. 7, 2021), https://www.pewresearch.org/internet/fact-sheet/mobile/.

[7] *See* "Mobile Vendor Market Share United States of America" STATCOUNTER (June 2022), https://gs.statcounter.com/vendor-market-share/mobile/united-states-of-america.

26. Apple's market power is reinforced by substantial barriers to entry. Developing the hardware and software needed to market a smartphone requires a substantial outlay of capital and expertise. The iPhone also benefits from significant indirect-network effects generated by its sizable user base and large community of developers creating iOS apps. To succeed, new entrants would need to convince users to switch to a new smartphone operating system without the catalog of apps available on iOS, while simultaneously convincing developers to incur the costs of writing apps for a new operating system without iOS' sizable user base. These are substantial hurdles. Brand loyalty to existing manufacturers, and high switching costs, compound the difficulty of entry.[8] Highly sophisticated and resourced companies—e.g., Amazon and Microsoft—have sought to market smartphones and failed to gain traction.

2. The Tablet Product Market

27. Tablets share certain features of smartphones, and other features of laptops, but they are a distinct product. Apple introduced the first tablet—the iPad—in 2010, marketing it as "a third category of device."[9] Tablets do not replace smartphones, and were never intended to. Apple and other tablet manufacturers treat tablets as a distinct product line, both in marketing materials and public filings.[10] There is widespread industry and public recognition of a distinct market for tablets.[11]

28. One fundamental difference between tablets and smartphones is the screen size. The screen on a smartphone ranges from 4 to 6 inches, making the device small enough to fit into a pocket.[12] Tablets have screens ranging from 7 to 17 inches, making them far less mobile or

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[8] *See infra* at Section VII.A.1.

[9] *See* William Gallagher, "Apple got tablets right, and created a whole new market with the iPad 12 years ago today" APPLEINSIDER (Jan. 27, 2022), https://appleinsider.com/articles/19/01/27/apple-got-tablets-right-and-created-a-whole-new-market-with-the-ipad.

[10] *See* Apple Inc. 2022 Form 10-K at 1 (listing iPad as a distinct product line, separate from other Apple offerings).

[11] *See, e.g.,* "Tablet Vendor Market Share United States Of America," STATCOUNTER, https://gs.statcounter.com/vendor-market-share/tablet/united-states-of-america (last accessed Oct. 28, 2022).

[12] *See* "Smartphone sales market share in the United States from 2017 to 2019, by display size,", STATISTA (Apr. 21, 2022), https://www.statista.com/statistics/1042669/us-smartphone-sales-by-display-size/.

stowable.[13] The screen size differential also means that certain apps are developed solely for either tablets or smartphones, and are not available on both.

29. While some tablets have cellular connectivity, and can be used to make and receive telephone calls, that is not a core functionality. Rather, with the larger screen, tablets provide more immersive internet connectivity. And they can be used to perform a range of productivity tasks like a laptop or desktop computer. For example, with keyboard accessories, tablets can be used as word processors. They are also marketed as creativity tools that can be used to create and edit music and video. That consumers typically own a tablet along with smartphones, computers and other mobile electronic devices shows that the products are compliments, not substitutes.

30. Apple enjoys market power in the U.S. tablet product market. As of June 2022, iPad's U.S. market share in the tablet market was 54%, more than double the 20% share of its closest competitor, Samsung.[14] There are also substantial barriers to entry into the tablet market, bolstering Apple's market power. As with smartphones, bringing a tablet to market requires substantial capital and expertise. Indirect network effects also reinforce Apple's market power and make entry difficult. To succeed, new entrants need to convince users to switch to a new tablet operating system without the catalog of apps available on iOS, while simultaneously convincing developers to incur the costs of writing apps for a new operating system without iOS's sizable user base. Brand loyalty and high switching costs likewise impose a substantial impediment to new entrants. Sophisticated and highly motivated companies, including Google and Microsoft, have sought to market tablets and failed to gain significant market share for their offerings.

3. The Smart Watch Product Market

31. Smart watches are wearable devices that, like smartphones, offer apps and connectivity. But they are a distinct product with distinct demand. As Apple promotes, a smart watch "can do what your other devices can't because it's on your wrist."[15] Apple and other smart

[13] *See* "Tablet Comparison Chart: List Of Tablets In 2022," TABLETMONKEYS (June 2022), https://tabletmonkeys.com/tablet-comparison/ (last accessed Oct. 28, 2022).

[14] *See* STATCOUNTER, *supra* note 11.

[15] *See* https://www.apple.com/watch/why-apple-watch/ (last accessed Oct. 28, 2022).

watch manufacturers treat smart watches as a distinct product line, both in marketing materials and public filings.[16] There is widespread industry and public recognition of a distinct market for smart watches.[17]

32. Because they are wearable, smart watches feature an array of functions tracking the user's activity and monitoring fitness-related metrics. For example, they can track the user's sleep patterns, blood oxygen, and heart rate, and they can make emergency calls after a hard fall.[18] Many (but not all) smart watches also have text, phone, and email functionality. Some, but not all, store and play music. Web browsing on a smart watch is limited or non-existent.

33. Smart watches are not a replacement for smartphones or tablets. Their small interface allows for only limited functionality and features. For certain features—*e.g.*, texting and calling—many smart watches must be paired with another device. Even smart watches with cellular connectivity can require a smartphone to be enabled. For example, to set up a new Apple Watch, the user must have an iPhone 8 or later.[19] Because smart watch owners commonly often own smartphones, tablets and other electronic devices as well, these products are compliments, not substitutes.

34. Apple Watch, launched in 2015, leads the Smart Watch market. Even including fitness trackers,[20] Apple Watch has an approximately 46% market share in the United States, besting all rivals.[21] And as with smartphones and tablets, there are significant barriers to entry in the smart-watch market. Bringing a smart watch to market requires substantial capital and expertise. Indirect

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[16] *See* Apple Inc. 2022 Form 10-K at 1 (listing Apple Watch as a distinct product line, separate from other Apple offerings).

[17] *See, e.g.,* Katharina Buchholz, "Apple Watch Leads U.S. Market," STATISTIA (Oct. 15, 2021), https://www.statista.com/chart/25982/smartwatch-market-by-brand-usv/.

[18] *Id.*

[19] *See* https://support.apple.com/en-us/HT204505 (last accessed Oct. 28, 2022).

[20] Fitness tracking watches like Fitbit allow users to track fitness related metrics, including steps taken in a day and calories burned. But they generally lack many of the features and functionality of smartwatches. There is also a substantial cost differential, with the most popular fitness tracking watches retailing for less than $100 and the Apple Watch ranging from $200 to more than $1000. Apple has market power in the smartphone market whether or not fitness tracking watches are part of that market.

[21] *See* Buchholz, *supra* note 17.

network effects also cement Apple's market power and deter new entrants. To succeed, new entrants need to convince users to switch to a new smart watch operating system without the catalog of apps available on Apple's smart-watch, while simultaneously convincing developers to incur the costs of writing apps for a new operating system without the Apple smart watch's sizable user base. Brand loyalty and high switching costs likewise impose a substantial impediment to new entrants. These barriers reinforce Apple's market power.

B. NFC Tap-and-Pay Technology Predates Apple Pay and is Available to All Competitors Offering Payment Solutions on Android.

35. Tap-and-pay mobile wallets are enabled by NFC chips installed in mobile devices. NFC technology allows two electronic devices to exchange information when brought into near proximity. Apple did not invent NFC. NFC evolved from radio-frequency identification (RFID) technology that has been around for decades. The first RFID patent was issued in 1983, and NFC was standardized in 2003 through the efforts of Sony and Phillips.[22]

36. Both RFID and NFC rely on inductive coupling between a "reader" device and a "tag." The reader creates a magnetic field by passing an electric current through a coil. That field induces an electric current within the tag, and once this match has been made, the two devices can wirelessly exchange data. The principal difference between RFID and NFC is the transmission range. RFID can cover longer distances, whereas NFC can span only a few centimeters.[23]

37. RFID and NFC enabled devices are everywhere today. If you have ever entered a hotel room by tapping a key card, or paid a toll with a device attached to your windshield, you have used RFID, NFC, or both.

38. To set up Apple Pay, users need to load a payment card (or cards) onto the wallet. Apple Pay can support all manner of payment cards, including credit, debit, prepaid, transit, and other cards linked to an account from which funds can be accessed (provided the user agrees to Apple's terms). Users can then toggle between enabled payment cards, and set a default option.

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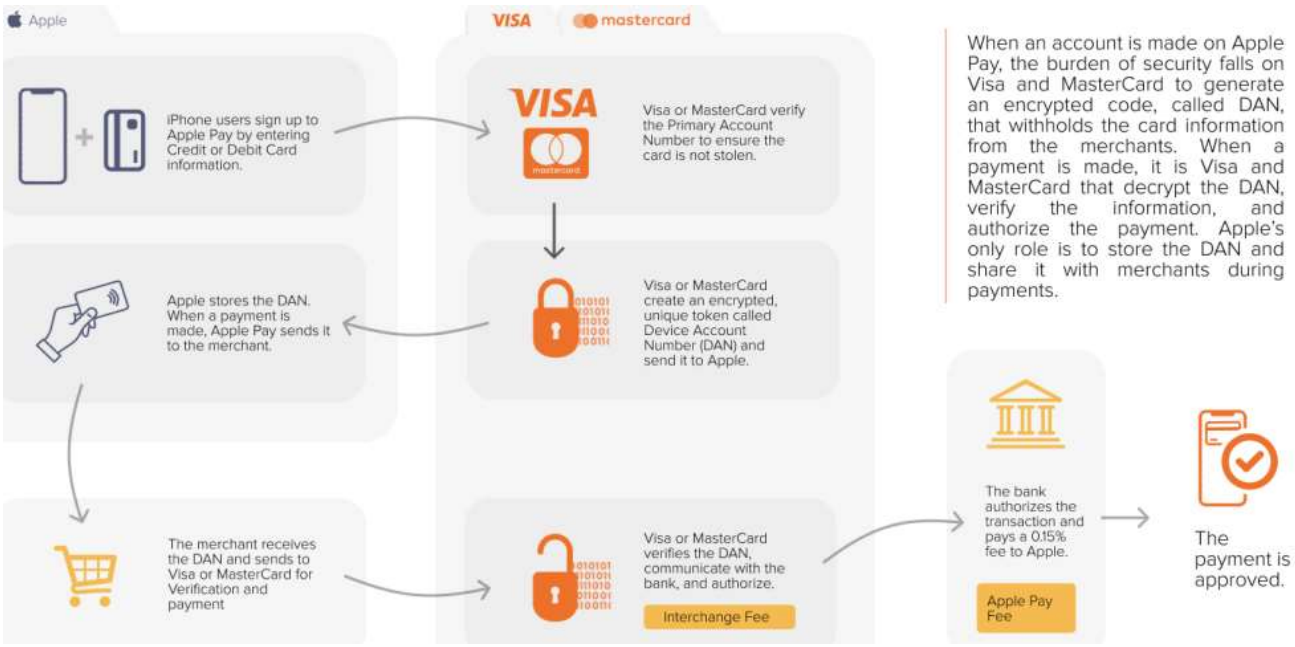
[22] *See* "The History of NFC," PARAGON ID, https://www.paragon-rfid.com/en/the-history-of-nfc/ (last accessed Oct. 28, 2022).

[23] *See* Calvin Wankhede, "What is NFC and how does it work? Everything you need to know," ANDROID AUTHORITY (Oct. 18, 2022), https://www.androidauthority.com/what-is-nfc-270730/.

39. When an Apple Pay user approaches an NFC terminal compatible with Apple Pay, the mobile wallet automatically opens and the user can make a payment by holding his or her device within close proximity to the terminal.

40. Payment networks—Visa or MasterCard—handle most of the processing work for Apple Pay transactions. Like Google Pay, Apple Pay transactions are tokenized, meaning that the actual card number is not used by Apple or provided to the merchant. Rather, Visa or MasterCard provide Apple with a token number (sometimes known as the Device Account Number or "DAN"), and when an Apple Pay transaction is initiated, the payment network verifies the token and communicates with the card-issuing bank to authorize or deny payment. The entire process can be depicted as follows:



41. Before the iPhone launched in 2007, mobile phones were already using NFC technology and promoting it as a means of sharing information and making purchases, effectively transforming the cellphone into a digital wallet.[24] The first digital wallet with NFC technology to gain traction was Google Pay (formerly Google Wallet and Android Pay), introduced for Android OS devices in 2011. Among other features, Google Pay allows users to store and toggle between payment cards within a digital wallet on their mobile device, and then make payments with those cards by holding the device within proximity of a payment terminal. The cards themselves do not need to be in the user's possession at the time of payment. All the user needs to do is tap the mobile device on the terminal, and the payment information is transmitted via NFC.[25]

[24] *See* Kent German, "Nokia's 6131 offers NFC technology," CNET (Jan. 7, 2007), https://www.cnet.com/culture/nokias-6131-offers-nfc-technology/; "The History of NFC," PARAGON ID, https://www.paragon-rfid.com/en/the-history-of-nfc/ (last accessed Oct. 28, 2022).

[25] Google Pay was rebranded several times between launch in 2011 and today. It was initially known as Google Wallet. In 2015, Google Wallet was renamed Android Pay with new functionality being introduced. Google Wallet continued as a peer-to-peer payments app. In 2018, Google merged Android Pay and Google Wallet to create Google Pay. Google most recently announced that in certain countries Google Pay will automatically become Google Wallet (again) through an app update in summer 2022, and feature new functionality, including the ability to store vaccine cards and digital car keys. In the United States, Google Pay and Google Wallet will coexist for at least some period of time. *See* "The History of NFC," PARAGON ID, https://www.paragon-rfid.com/en/the-history-of-nfc/ (last accessed Oct. 28, 2022); Nelson Aguilar, "Is Google Wallet the

42. The Android OS does not prevent third-party app developers or device manufacturers from accessing NFC technology to create tap-and-pay Android payment solutions that might compete with Google Pay. For example, in 2013, carriers AT&T, T-Mobile and Verizon launched the Softcard Android app, which enabled NFC tap-and-pay on a range of Android devices.

43. Softcard folded in 2015 after selling certain assets to Google, but with no Android prohibition on utilizing NFC technology, other competitors emerged in the Android space to offer tap-and-pay functionality. For example, Barclays has created an Android solution. The app allows Barclays customers to store their Barclays-issued cards (using a secure account ID rather than the card number) and complete tap-and-pay payments through an Android device's NFC interface.[26]

44. After announcing a partnership with Visa in 2013 to support NFC payments on its devices, Samsung launched Samsung Pay in 2015.[27] Like Google Pay, Samsung Pay allows users to store payment card information on their devices and make payments by placing the mobile device near an NFC-equipped payments terminal. By 2018, there were 51 million Samsung Pay users worldwide, compared to 39 million Google Pay users.[28]

45. None of these tap-and-pay solutions charges transaction fees to either users or card issuers. However, Apple excludes all of them from iOS mobile devices.

Same as Google Pay? We'll Explain," CNET (July 26, 2022), https://www.cnet.com/tech/mobile/is-google-wallet-the-same-as-google-pay-well-explain/. For ease of reference, this amended complaint uses "Google Pay" to refer to the Google service providing tap-and-pay payments on Android devices through an NFC interface, however that service has been branded.

[26] *See* https://www.barclays.co.uk/ways-to-bank/mobile-banking-services/contactless-mobile/ (last accessed Oct. 28, 2022).

[27] *See* Martha DeGrasse, "MWC 2013: Samsung, Visa team up for mobile payments," RCRWIRELESSNEWS (Feb. 25, 2013), https://rcrwireless.com/20130225/devices/samsung-visa-mobile-payments; "Top Manufacturers," APPBRAIN, https://www.appbrain.com/stats/top-manufacturers (last accessed Oct. 28, 2022).

[28] "Number of Apple Pay, Samsung Pay and Google Pay contactless payment users in 2018, with a forecast for 2020," STATISTA, https://www.statista.com/statistics/722213/user-base-of-leading-digital-wallets-nfc/ (last accessed Oct. 28, 2022); Lexi Savvides, "Samsung Pay FAQ: Everything you need to know," CNET (July 21, 2021), https://www.cnet.com/tech/services-and-software/samsung-pay-faq-everything-you-need-to-know-mobile-wallet/; "Samsung Pay," WIKIPEDIA, https://en.wikipedia.org/wiki/Samsung_Pay (last accessed Oct. 28, 2022).

C. Apple Ties Apple Pay to Its Mobile Devices By Excluding Any Rival Tap-and-Pay iOS Mobile Wallet.

46. In terms of functionality, Apple Pay is substantially identical to Google Pay.[29] Launched in 2014 with the introduction of iPhone 6, Apple Pay comes preinstalled on Apple's iPhones, iPads and Watches. Consumers cannot purchase one of these devices without also acquiring Apple Pay, which they enable by loading a payment card (or cards) onto the platform. Apple Pay is not, however, integrated into Apple's mobile devices, as Apple requires users to accept supplemental terms and conditions governing their use of Apple Pay and to separately enable its functionality.[30]

47. But iOS consumers never agree that they will exclusively use Apple Pay as their tap-and-pay mobile wallet. Instead, as discussed herein, Apple coerces consumers to use Apple Pay by barring all would-be Apple Pay rivals from accessing the NFC interface installed on the mobile devices Apple already sold to the iOS consumers.

48. NFC functionality on iOS devices is provided by an NFC chip and associated software within the device. Apple typically allows, and mobile device owners desire, third-party app developers to access and integrate their apps with various device hardware and software—e.g., the iPhone's camera, speakers, microphone, Siri, and navigation—because this enhances the functionality of apps and, thus, Apple's products. In this way, Apple can leverage the labor and creativity of third-party app developers to make its products more versatile, functional and desirable.

49. But Apple has taken a distinctly exclusionary approach with NFC technology. Apple currently allows developers to use the NFC interface, but *only* to provide functionality that does *not* compete with Apple Pay. For example, developers can use the NFC interface to allow users to "scan a toy to connect it with a video game," or "an in-store sign to access coupons," among other things.[31]

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[29] *See* Karthik Ravagan, "Apple Pay vs. Google Pay: How They Work," INVESTOPEDIA (Apr. 27, 2022), https://www.investopedia.com/articles/personal-finance/010215/apple-pay-vs-google-wallet-how-they-work.asp ("Apple Pay and Google Pay are largely identical offerings").

[30] *See* Apple Inc. iOS Software License Agreement https://www.apple.com/legal/sla/docs/iOS12.pdf (last accessed Oct. 28, 2022).

[31] *See* https://developer.apple.com/design/human-interface-guidelines/technologies/nfc/#:~:text=Near%2Dfield%20communication%20(NFC),attached%20to%20real%2Dworld%20objects (last accessed Oct. 28, 2022).

Apple also recently announced technology that will "empower millions of merchants" to *accept* Apple Pay payments from an iPhone.[32] But what developers cannot do is use NFC to create apps that, like Apple Pay, allow users to *make* tap-and-pay payments. Only Apple Pay can use NFC for that function.

50. This restriction is implemented through Apple's developer guidelines. To develop an app for Apple's iOS devices, developers must accept Apple's Developer Program License Agreement. That agreement provides that only apps meeting "Apple's Documentation and Program Requirements may be submitted for consideration by Apple for distribution via the App Store."[33] Among other documentation developers must accept are Apple's guidelines governing NFC technology. Those NFC guidelines provide that NFC can be used "to give users more information about their physical environment and the real-world objects in it."[34] But developers are not permitted to use NFC for payment apps that might compete with Apple Pay. The guidelines state[35] in this regard:

> **Important**
>
> Core NFC doesn't support payment-related Application IDs.

51. This restriction forecloses all potential Apple Pay rivals, making Apple Pay the only tap-and-pay mobile wallet on iOS. By barring competitor solutions in this fashion, Apple has imposed what is known as a "requirements tie." That is, consumers who purchase Apple mobile devices do not need to use a tap-and-pay wallet. But if they do—and many do—Apple has made Apple Pay the only option for fulfilling that requirement.

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[32] *See* "Apple empowers businesses to accept contactless payments through Tap to Pay on iPhone," (Feb. 8, 2022), https://www.apple.com/newsroom/2022/02/apple-unveils-contactless-payments-via-tap-to-pay-on-iphone/.

[33] *See* Apple Developer Program License Agreement https://developer.apple.com/support/downloads/terms/apple-developer-program/Apple-Developer-Program-License-Agreement-20220606-English.pdf (last accessed Oct. 28, 2022).

[34] *See* https://developer.apple.com/documentation/corenfc (last accessed Oct. 28, 2022).

[35] *Id.*

52. The application of this restriction is made possible in part by Apple Pay's market power in the market for its iOS mobile devices. Market power provides Apple with the credibility to implicitly threaten banks with the prospect of their customers not being able to use Apple Pay. Apple can deploy such a threat because of the significant number of users that would switch issuers rather than smartphones to retain tap-and-pay functionality. This helps to explain why card issuers have chosen to agree to Apple's terms. They risk more by refusing Apple Pay's terms than they do by paying Apple the fees that it demands. Of course, if card issuers could price Apple Pay transactions higher than Google Pay or Samsung Pay transactions to account for Apple's supracompetitive charges, then consumers of iOS devices would demand that Apple allow them to use competing mobile wallets. But by disrupting natural market forces and eliminating price transparency to consumers, Apple is able to insulate itself from the expected consequences of its exclusionary conduct and extract additional monopoly rents by virtue of its unlawful tying scheme.

D. Apple Unlawfully Monopolizes the Tap-and-Pay iOS Mobile Wallets Market.

1. The Tap-and-Pay iOS Mobile Wallets Market is a Distinct, Relevant Antitrust Market.

53. Tap-and-Pay iOS Mobile Wallets are a distinct product for which there is distinct demand. More than 1 billion people use Apple's mobile iOS devices, and about half of them have enabled the Apple Pay Mobile Wallet to make tap-and-pay payments.[36] And while these 500 million people may not wish to use Apple Pay Mobile Wallet for their tap-and-pay payments, they have no other choice other than to switch mobile devices, which is a costly and unrealistic option.

54. The tap-and-pay functionality offered by Apple Pay is distinct from other payment forms. Apple promotes the service as being "[f]aster and easier than using cards."[37] When Apple launched Apple Pay, it announced that the service "will change the way you pay."[38] Without having to handle or carry cash, or change, or cards, Apple Pay users can complete transactions by simply

[36] *See* Gene Munster, David Stokman, "Apple Pay Availability Growing 20% Plus," LOUP (Nov. 5, 2020), https://loupfunds.com/apple-pay-availability-growing-20-plus/.

[37] *See* https://www.apple.com/apple-pay/ (last accessed Oct. 28, 2022).

[38] *See* "Apple Announces Apple Pay," (Sep. 9, 2014), https://www.apple.com/newsroom/2014/09/09Apple-Announces-Apple-Pay/.

tapping their iOS device on any participating payment terminal. There is no need to touch buttons on the terminal itself, or handle cards, which according to Apple makes it less likely to "pick up – and spread – germs."[39] With Apple Pay, one needs to carry or wear only a mobile device to make purchases.

55. Tap-and-Pay iOS Mobile Wallets also provide distinct security advantages. When a payment card is used at checkout, the card number is shared with the merchant and sometimes the card itself is handled by the clerk. If intercepted, the card number can be used to make unauthorized purchases. Tap-and-pay functionality eliminates this particular security risk because, as addressed above, card numbers can be "tokenized" such that the actual card number is never shared with merchants. According to Apple, this makes Apple Pay a "more secure way to pay than using your physical credit, debit, and prepaid cards."[40]

56. Tap-and-Pay iOS Mobile Wallets are a multi-sided platform that exhibits what economists call "indirect network effects," meaning participation on one side of the platform affects demand on another side. The more users a Tap-and-Pay iOS Mobile Wallet has, the more appealing it is to card issuers considering whether to enable their cards on the wallet, and for merchants (and hence card acquiring banks) to enable their terminals to accept the wallet's payments. The more end users utilizing the platform, the more attractive the platform is to merchants and to card acquiring banks. And the more merchants processing a wallet's payments, the more likely users and issuers will want to participate in the platform. All participants in the platform—end users, issuers, and merchants—are consumers of the platform's services.

57. There is widespread recognition that Tap-and-Pay iOS Mobile Wallets are a distinct product market. In May 2022, the European Commission issued a preliminary report concluding that Apple has "abused its dominant position in markets for mobile wallets on iOS devices," and that "Apple enjoys significant market power in the market for mobile devices and a dominant position on

[39] *See* https://www.apple.com/apple-pay/ (last accessed Oct. 28, 2022).

[40] *See* Apple Pay security and privacy overview, https://support.apple.com/en-us/HT203027 (last accessed Oct. 28, 2022).

mobile wallet markets."[41] Apple treats and reports Apple Pay as a distinct product line within its Services division, separate and apart from its mobile devices.[42] There are distinct users of Tap-and-Pay iOS Mobile Wallets. Consumers who own Android mobile devices cannot obtain or access Tap-and-Pay iOS Mobile Wallets on their Android devices. Likewise, iOS mobile device users cannot use Android tap-and-pay wallets on their Android devices (and any iOS versions of those apps are, by virtue of the challenged restraints, unable to provide tap-and-pay functionality at all). Tap-and-Pay iOS Mobile Wallets are also priced distinctly from tap-and-pay wallets available on Android mobile devices. Both Google Pay and Samsung Pay are free to users and card issuers, whereas Apple charges issuers transaction fees on each Apple Pay transaction.

58. Apple has pointed to Android mobile wallets, contactless payment cards and QR-code payment apps as competitors, but these forms of payment are not reasonably close substitutes for Apple Pay and do not constrain Apple Pay's pricing power.

a. Android Wallets Are Not Reasonable Substitutes For Apple Pay.

59. There are no other tap-and-pay mobile wallets available on Apple's iOS devices because Apple has barred those wallets from accessing the NFC interface on iOS devices. Thus, while an iOS user can download an iOS version of Google Pay from Apple's App Store, the iOS Google Pay app cannot be used to make tap-and-pay payments. The app cannot even be used at the point-of-sale at all. Lacking Apple Pay's core functionality on an iOS device, Google Pay and other mobile wallets are not a substitute for Apple Pay.

60. Android mobile wallets are also not in the same relevant market as Tap-and-Pay iOS Mobile Wallets because a Tap-and-Pay iOS Mobile Wallet is not constrained by substitution in the market for smartphones. To be more precise, a small but significant and non-transitory increase in the price of a Tap-and-Pay iOS Mobile Wallet transaction would not trigger switching by users to mobile wallets on Android-based devices.

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[41] *See* "Antitrust: Commission sends Statement of Objections to Apple over practices regarding Apple Pay," European Commission, (May 2, 2022), https://ec.europa.eu/commission/presscorner/detail/en/IP_22_2764 (last accessed Oct. 28, 2022).

[42] *See* Apple Inc. 2022 Form 10-K at 2.

61. Switching costs from iOS to Android mobile devices are high, as addressed below. Even if consumers might be induced to switch to Android mobile devices in response to a change in Apple Pay fees, Apple has assured this will not happen. As addressed further below, Apple bars issuers from charging their cardholders the price for their participation in Apple Pay. In other words, issuers cannot pass through the cost of Apple Pay. Shielded from Apple Pay's fees, consumers have no reason to switch in response to a change in the level at which Apple Pay's fees are set. Apple can (and has) set those fees above the competitive level knowing that, from consumers' perspective, Apple Pay is, and has always been, free of charge.

62. It is also apparent that at the time a mobile-device purchaser decides whether to purchase an Apple device or an Android device or another brand of device, the purchaser has no ability to take into consideration the additional cost imposed on the market by Apple's anticompetitive conduct. In fact, the added cost is unseen by the purchaser, who is not even aware of the fees that Apple imposes on card issuers. As a result, the consumer has no incentive when purchasing a mobile device to switch to a competing device that does not charge anticompetitive fees. Apple's pricing power in the Tap-and-Pay iOS Mobile Wallets Market is thus not constrained by consumer decisions at the time of purchasing a mobile device.

63. The only party with the incentive to substitute, or encourage substitution to Android wallets, is therefore the card issuer. Apple has, however, barred issuers from encouraging consumers to switch through the natural market force of differential pricing, and so issuers can encourage switching only by ceasing to participate in Apple Pay. This is demonstrably not a viable option for nearly all issuers.

64. As of September 2020, approximately 51% of iPhone users had activated Apple Pay. Given the substantial population of Apple Pay users, issuers cannot profitably (and generally have not) disabled Apple Pay in an effort to shift demand to other mobile wallets, which can only be used on Android devices. Indeed, the number of Apple Pay issuers has increased steadily since Apple Pay's launch, reaching a reported 5,480 banks worldwide by 2020 (20% increase over 2019).[43] This

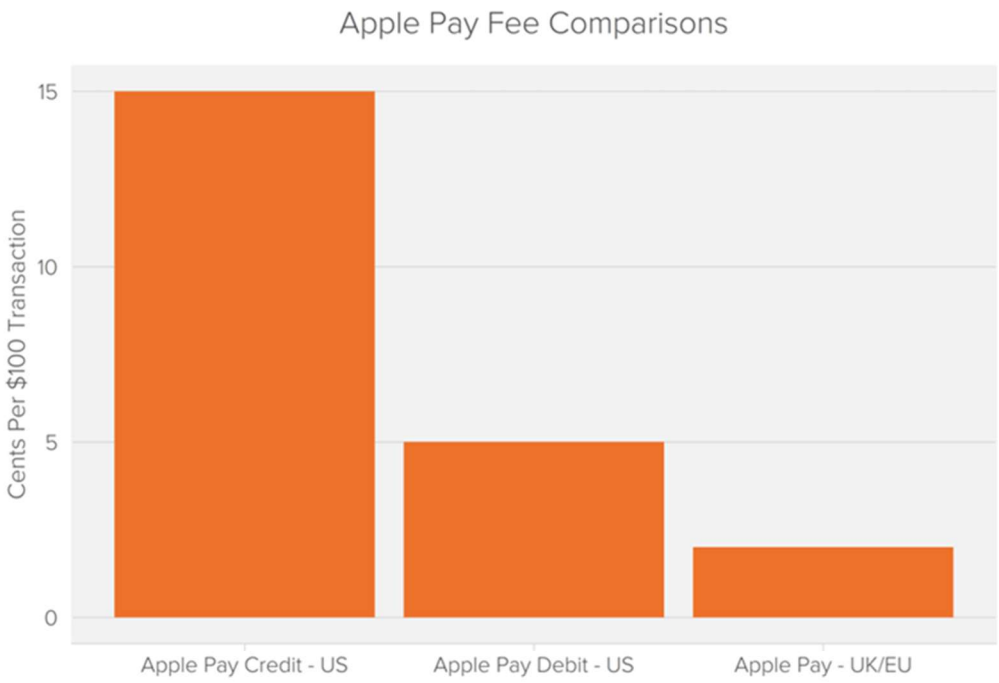
[43] *See* Munster and Stokman, *supra* note 36.

reveals that issuers do not expect that removing Apple Pay would result in consumers switching to Android devices and the mobile wallets available on those devices, rather they fear consumers would switch to cards issued by other banks instead.

65. It is also apparent from historic pricing that Android tap-and-pay mobile wallets do not impose any constraint on the price of Tap-and-Pay iOS Mobile Wallets. For years, Apple Pay has found it profitable to impose a significant issuer fee above the $0 fee imposed by Android apps providing virtually the same service on Android devices—namely, Google Pay and Samsung Pay. If these Android products were in fact substitutes for Apple Pay, demand would have shifted to Google Pay and Samsung Pay. But this has not happened, as just noted. That issuers have absorbed Apple Pay fees demonstrates issuers' inability to drive consumers to Android devices and the mobile wallets available on those devices. Imposing no restraint on Apple Pay's pricing, and hence on the ability of a hypothetical monopolist's ability to profitably impose a small but significant and non-transitory increase in price (SSNIP), those Android wallets cannot be in the same antitrust market as Apple Pay.

66. One further indication that Tap-and-Pay iOS Mobile Wallets are a distinct relevant market is the ability of Apple to price discriminate in order to extract a higher fee for transactions on which the banks are able to charge a higher interchange fee. That is, issuers command higher interchange fees on credit transactions than they do on debit. Without any cost-based justification, Apple charges higher fees on credit than debit (15 basis points (0.15%) vs. 0.5 cents ($0.005)). The fact that Apple can price discriminate despite providing precisely the same service to debit and credit card transactions shows that it can, and indeed has imposed a small but significant, non-transitory increase in price when the opportunity to do so arises. The same can be seen in the fees Apple sets across different geographic markets where interchange fees are lower and Apple Pay fees are accordingly reduced. In the UK, for example it is reported that issuers pay Apple "only a few pence [on a] £100 transaction."[44]

[44] *See* Graham Spencer, "The State of Apple Pay," MACSTORIES (Oct. 8, 2015), https://www.macstories.net/stories/the-state-of-apple-pay/.



b. Contactless Cards are Not Reasonable Substitutes For Apple Pay.

67. Contactless payments can also be conducted using contactless payment cards. But as with Android wallets, Apple Pay's ability to profitably maintain a substantial fee premium above the competitive level for mobile wallet payments (up to 15 basis points), without Apple Pay transactions moving to contactless cards in greater numbers than Samsung Pay and Google Pay transactions, demonstrates that contactless payment cards (and other cards for that matter) are outside the relevant market.

68. Issuers are better off when their cardholders tap their cards rather than an iOS device that enables those cards through Apple Pay. When Apple Pay is used, the issuer pays Apple a significant transaction fee. When the card is used by itself, the issuer pays no such fee. Given this stark difference in price, if issuers were confident that consumers saw the cards as reasonable substitutes for Apple Pay, issuers would disable Apple Pay (but not Google Pay or Samsung Pay) and demand from iOS users would shift to cards. But as noted, this has not happened. Issuers are adopting Apple Pay in greater numbers every year.

69. As issuers recognize, there are differences between Apple Pay and contactless (or other) cards that matter to many consumers. Mobile wallets can offer greater convenience and

enhanced security through tokenization of the card number and the use of passwords, biometrics or other authentication protocols to confirm that the individual making the purchase is the cardholder. Many consumers value these features, and some would switch banks to retain them. This prevents issuers from disabling Apple Pay in an effort to shift demand to contactless cards. As with Android wallets, the application of a SSNIP test would demonstrate that contactless cards would not constrain a hypothetical monopolist from increasing prices by a small but significant amount over and above a competitive level.

c. QR-Code Payment Apps Are Not Reasonable Substitutes For Apple Pay

70. QR codes are one means of making payments, but apps with QR functionality are not reasonable substitutes for Tap-and-Pay iOS Mobile Wallets.

71. To begin with, all QR-code apps involve many additional steps and offer different functionality. With tap-and-pay wallets like Apple Pay, users need only authenticate themselves (generally with biometrics) and tap the phone on the terminal to complete the transaction. QR code apps require that the user open a specific application, click through as necessary to open the QR feature, hold the phone in place to scan a QR code, and complete the transaction from there. This process is nothing like the functionality of a tap-and-pay wallet.

72. More critically, most popular QR payment applications are retailer-specific. For example, Starbucks's mobile app allows users to scan QR codes presented at checkout to pay with linked credit and debit cards. Walmart has a similar offering. The few QR payment apps that are not retailer-specific—for example, offerings by PayPal and Venmo—were not accepted until July 2020, and acceptance of this technology has been limited since then. Most retail locations do not accept payments through these applications, whereas Apple Pay is accepted by more than 90 percent of U.S. merchants, according to Apple itself.[45] QR-code apps are thus not substitutes for Apple Pay because, unlike Apple Pay, they do not allow users to make purchases from the array of merchants they interact with on a daily basis.

[45] *See* https://www.apple.com/newsroom/2022/02/apple-unveils-contactless-payments-via-tap-to-pay-on-iphone/#:~:text=Apple%20Pay%20is%20already%20accepted,the%20US%20later%20this%20year.

73. As with Android wallets and contactless cards, QR codes ultimately cannot be deemed a substitute for Apple Pay because there is no substitution to these apps in response to the fees Apple Pay charges. PayPal and Venmo do not charge issuers transaction fees like Apple Pay, but when PayPal and Venmo activated their QR-code functionality in 2020, there was no observable demand shift away from Apple Pay. Issuers in fact continued to participate in Apple Pay, and in increasing numbers. That despite the introduction of QR-code based apps at zero cost, Apple has been able to sustain a substantial price premium over QR code apps, without losing acceptance, shows that Apple Pay and QR-code apps are not in the same relevant market.

d. The Market for Tap-and-Pay iOS Mobile Wallets Demonstrates All Characteristics of an "Aftermarket."

74. The market for Tap-and-Pay iOS Mobile Wallets can be considered an aftermarket to the primary device markets for smartphones, tablets, and smart watches. An aftermarket is a derivative market for goods or services used in conjunction with some primary product. In determining whether an aftermarket exists, relevant factors include whether "(1) the aftermarket is wholly derivative from the primary market; (2) illegal restraints of trade relate only to the aftermarket; (3) the defendant did not achieve market power in the aftermarket through contractual provisions that it obtains in the initial market; and (4) competition in the initial market does not suffice to discipline anticompetitive practices in the aftermarket." *AliveCor, Inc. v. Apple Inc*., Case No. 21-cv-3958, WL 2022 833628, at *8 (N.D. Cal. Mar. 3, 2022). The market for Tap-and-Pay iOS Mobile Wallets satisfies each of these criteria.

75. *First*, the market for Tap-and-Pay iOS Mobile Wallets is entirely derivative and dependent on the device foremarkets. That is, Tap-and-Pay iOS Mobile Wallets do not function on their own. The market for these wallets exists only because there are foremarkets for smartphones, tablets, and smart watches on which Tap-and-Pay iOS Mobile Wallets can function.

76. *Second,* the challenged restraints relate only to the aftermarket, not the foremarket. As alleged herein, Apple has blocked rivals from accessing the NFC interface for purposes of developing a Tap-and-Pay iOS Mobile Wallet. This is not a restriction in the device foremarkets for

smartphones, tablets and smart watches. And while Apple maintains market power in those device foremarkets, it is not by virtue of the challenged aftermarket restrictions.

77. *Third*, Apple's market power in the aftermarket for Tap-and-Pay iOS Mobile Wallets does not derive from contractual provisions it secures in the device foremarkets. When consumers buy Apple's smartphones, tablets and smart watches, they do not agree (contractually or otherwise) that Apple Pay will be the exclusive Tap-and-Pay iOS Mobile Wallet available for their devices. Apple's market power in the Tap-and-Pay iOS Mobile Wallet market is therefore not a contractual power obtained in the device foremarkets.

78. *Fourth*, competition in the device foremarkets for smartphones, tablets, and smart watches does not constrain Apple's market power in the Tap-and-Pay iOS Mobile Wallets Market. Competition in the foremarkets is substantially diminished because consumers are effectively locked into their foremarket purchase—and particularly into the iOS ecosystem—by the high cost and difficulty of switching to a different operating system. Moreover, even if Apple lacks monopoly power in the foremarket, market imperfections prevent competition in the foremarket from disciplining Apple's conduct. There are several relevant market imperfections: For starters, the side of the aftermarket that directly pays (*i.e.*, card issuers) does not make purchase decisions in the foremarket, and therefore cannot drive substitution in the foremarket in response to aftermarket restraints. In addition, consumers in the foremarket (*i.e.*, iOS users) lack the visibility required to make a foremarket choice on the basis of aftermarket features. They cannot observe aftermarket pricing due to the confidentiality of Apple's contracts with card issuers and Apple's restrictions on price transparency to consumers. They are uncertain where Apple Pay will be accepted, whether they will use Apple Pay at all, how frequently and on which types of purchases. As a result, foremarket consumers cannot reasonably account for aftermarket costs when making a purchase decision. In fact, Apple actively represents to consumers that Apple Pay is entirely free to use, stating "Apple does not charge any fees when you use Apple Pay — in stores, online, or in apps."[46] Finally, even if foremarket consumers did have visibility into aftermarket pricing, Apple's anti-steering provisions

[46] *See* https://www.apple.com/apple-pay/ (last accessed Oct. 28, 2022).

(*i.e.*, contractual provisions that prohibit issuers from passing fees onto consumers) ensure that Apple's supracompetitive pricing in the aftermarket will never affect the lifetime cost of an iOS device for primary market consumers. This means iOS users have no incentive to substitute devices due to aftermarket pricing.

79. Apple possesses foremarket power because consumers are often reluctant to switch their foremarket purchase. It takes time and effort to learn an operating system, and users are disinclined to switch from iOS to Android (or vice versa) because they will face the same learning curve anew. This is compounded by the fact that both Apple (iOS) and Google (Android) offer a suite of integrated core apps that users learn to and interact with on a daily basis. Relearning takes time and effort. A New York Times guide to smartphones recommends against switching operating systems, precisely because "[b]y the time you've used a phone for a couple of years, you've spent a lot of time learning its quirks."[47]

80. The costs of switching are also high, and they increase over time. Devices in the foremarket (smartphones, tablets and smart watches) cost hundreds, and sometimes thousands, of dollars. Apple's devices are also designed to work seamlessly with each other, such that a user purchasing a new device in a different operating system can find it impractical without switching all their devices. In addition, over time iOS users acquire apps and content that is not compatible with other operating systems.[48] These are sunk costs lost by switching. As one Apple executive stated internally, "Who's going to buy a Samsung phone if they have apps, movies, etc already purchased? They now need to spend hundreds more to get where they are today."[49]

81. Similarly, device peripherals (cords, wireless headphones, charging devices, wireless keyboards, etc.) are generally not compatible across operating systems and need to be repurchased

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[47] *See* Andrew Cunningham, "iPhone vs. Android: Which is Better for You?" NEW YORK TIMES (January 27, 2021) https://www.nytimes.com/wirecutter/reviews/ios-vs-android/.

[48] *See id.*

[49] *See* "Apple's Past Sideloading Plans, Ecosystem Lock-in Strategy, and More Revealed in Internal Documents," MACRUMORS (Aug. 20, 2021), https://forums.macrumors.com/threads/apples-past-sideloading-plans-ecosystem-lock-in-strategy-and-more-revealed-in-internal-documents.2308143/.

when switching platforms. Apple device users also store materials on iCloud that cannot be accessed from non-Apple devices. Downloading and transferring materials from iCloud is time consuming and burdensome, with commentators observing that "Apple makes it difficult to use iCould services or access your media on non-Apple devices."[50] All of these switching costs accrue over time as users become increasingly invested in the iOS operating system. Accordingly, the costs of switching are not known or predicable when users transact in the device foremarkets.

82. Data confirms that very few iOS users switch operating systems. One recent study indicates that more than 90% of new iPhone purchases are made by consumers whose previous smartphone was likewise an iPhone.[51] Consumer lock-in thus persists beyond the lifecycle of particular iOS devices, a phenomenon known as "path dependency."[52] One consequence of path dependency is that many consumers were locked into iOS devices before Apple Pay and the challenged restrictions on Tap-and-Pay iOS Mobile Wallets, were adopted by Apple. In particular, iPhone launched in 2007 and iPad in 2010—years before Apple Pay was rolled out in 2015. The challenged restraints on Tap-and-Pay iOS Mobile Wallets were thus a change in policy effectuated after many consumers were locked into the iOS ecosystem and unable to readily switch operating systems.

83. Even when consumers transact in the device foremarkets, they have no visibility into the aftermarket restraint at issue, nor any ability to price in its effects on the market. As addressed above, the restraint operates on *developers*, who are precluded from accessing Apple's NFC interface to create competing Tap-and-Pay iOS Mobile Wallets. Consumers are not privy to the developer guidelines through which the restraint is effectuated. And because Apple imposes its aftermarket fees on issuers (not consumers), the fees do not give consumers any reason to substitute away from Apple products in the foremarkets.

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[50] *See* Cunningham, *supra* note 48.

[51] *See* Chance Miller, "iPhone loyalty rate continues to exceed 90%, new CIRP data shows," 9TO5MAC (Oct. 28, 2021) https://9to5mac.com/2021/10/28/iphone-loyalty-rate-data-switchers/.

[52] The Netherlands Authority for Consumers & Markets, *Market Study Into Mobile App Stores* (2019), at 55.

84. Consumers also have no reason to presuppose that, when making an initial iOS device purchase in the device foremarkets, they will be foreclosed from using Tap-and-Pay iOS Mobile Wallets other than Apple Pay. Apple's iOS devices come preloaded with a range of proprietary apps, but users understand and expect that alternatives can be procured. For example, iPhones come preloaded with Maps, Music, and Mail. But any iOS user can also download a range of alternative apps that provide the same or similar functionality—i.e., Gmail, Spotify, and Google Maps. Apple even markets its devices as being customizable through aftermarket app purchases that can add to and replace functionality on the devices. In fact, Google Pay itself is available on iOS devices,[53] but Apple prohibits the app from accessing the NFC interface and therefore supporting tap-and-pay functionality.[54] Consumers may be reasonably confused by the lack of tap-and-pay competition on iOS despite the availability of Google Pay.

2. Having Barred All Competitors, Apple Pay Exercises Monopoly Power in the Market for Tap-and-Pay iOS Mobile Wallets and Imposes Supracompetitive Fees.

85. By blocking rivals from accessing the NFC interface on iOS devices, Apple has secured for Apple Pay a 100% monopoly in the market for Tap-and-Pay iOS Mobile Wallets. There is not one competitor with even a sliver of this market. And this is despite the existence of multiple tap-and-pay wallets in the Android space, and many other digital wallets who—absent Apple's conduct—would be incentivized to compete with Apple Pay.

86. Notably in this regard, Google has created an iOS version of Google Pay that can be downloaded for free onto Apple's mobile devices. Google Pay is thus already positioned to compete, but without access to the NFC interface, Google Pay poses no competitive threat to Apple Pay in the market for Tap-and-Pay iOS Mobile Wallets.

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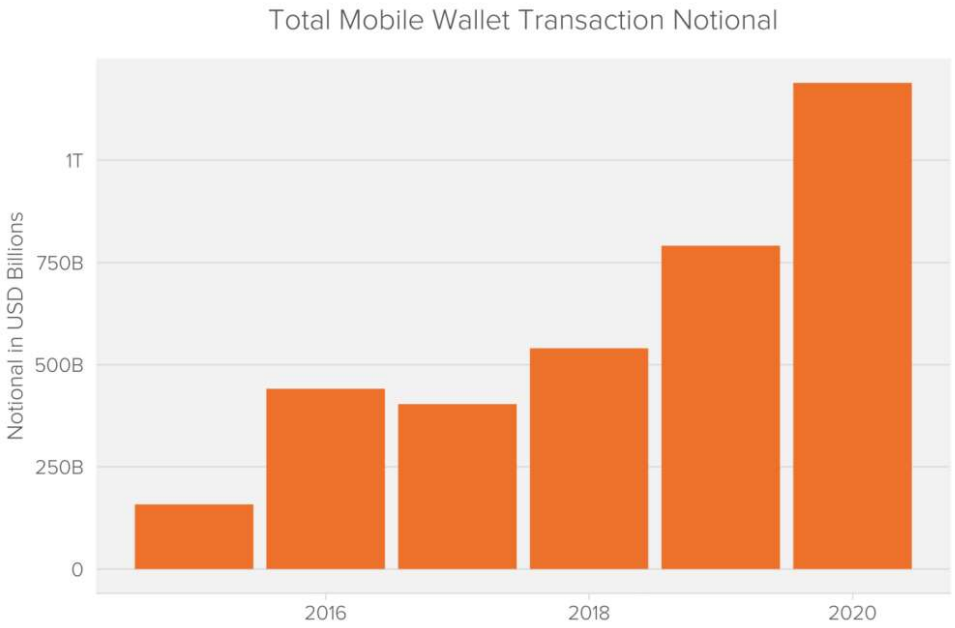
[53] *See* https://apps.apple.com/us/app/google-pay-save-and-pay/id1193357041 (last accessed Oct. 28, 2022).

[54] *See* Jeremy Laukkonen, "How to Use Google Pay on iPhone" LIFEWIRE (July 14, 2022) https://www.lifewire.com/use-google-pay-on-iphone-5410221 and https://support.google.com/googlepay/answer/10191035?hl=en&co=GENIE.Platform%3DiOS (last accessed Oct. 28, 2022).

87. With no competitors to discipline its pricing, Apple charges fifteen basis points (0.15%) on credit card transactions, and 0.5 cents ($0.005) on debit transactions. Apple saddles card issuers with 100% of these fees.

88. Apple Pay's issuer fees stand in stark contrast to the $0 fees charged by Android tap-and-pay solutions, and they add up quickly. Since 2015, mobile wallet transactions have more than quintupled, from just below $200 billion to more than $1200 billion in the United States.



89. Apple Pay alone reportedly accounted for 92% of U.S. mobile-wallet debit transactions in 2020.[55] Although Apple does not report Apple Pay earnings, industry analysts estimate that Apple Pay generated approximately $1 billion in revenues in 2019 and predict that number will grow to $4 billion by 2023.[56]

E. Apple Protects its Monopoly By Preventing Issuers From Driving Cardholders Away from Apple Pay.

90. Although Apple's transaction fees impose a substantial tax on issuers, issuers are barred from charging cardholders additional fees for Apple Pay transactions. Issuers agree to this prohibition only because of Apple's market power.

[55] *See* Mikey Campbell, "Apple Pay accounted for 92% of US mobile wallet debit transactions in 2020, study says," APPLEINSIDER (Aug. 17, 2021), https://appleinsider.com/articles/21/08/17/apple-pay-accounted-for-92-of-us-mobile-wallet-debit-transactions-in-2020-study-says.

[56] *See* Munster and Stokman, *supra* note 36.

91. Without this prohibition, card issuers could participate in Apple Pay, but avail themselves of natural market forces to promote cheaper alternatives by passing on all or some portion of the transaction fees that only Apple charges. For example, an issuer could price Apple Pay transactions to cover Apple's fees, while informing cardholders that this fee is needed to cover Apple fees and will not be charged if the cardholder makes contactless payments with the card itself, or through Google Pay or Samsung Pay.

92. By preventing this type of differential pricing, Apple has ensured that the price mechanism is disabled and consumers are perfectly inelastic to Apple Pay fees. That is, even if consumers might shift transactions to other platforms in response to a higher price to use Apple Pay, Apple's restraints prevent this from ever happening. Apple can charge issuers supracompetitive fees, knowing that consumers will never feel the pain and that issuers' only countermeasure is to disable Apple Pay entirely. This is evidently not a viable option for most issuers. As of September 2020, approximately 51% of iPhone users had activated Apple Pay.[57] Despite Apple's industry-high fees, banks continue to support Apple Pay to serve their iOS cardholders, as noted above.

F. Apple Leverages its Monopoly By Bundling Tap-and-pay Payments with E-Commerce Payments.

93. While Apple excludes competitors in the Tap-and-Pay iOS Mobile Wallets Market, that is not the only market in which Apple Pay operates. Apple Pay can also be used to make purchases online, both on websites and for physical goods or services sold within apps.[58] For example, if a consumer wishes to buy an item from eBay on an iOS device,[59] the purchase page (in both the eBay app and on its website) will provide the consumer with the option of using Apple Pay to complete the transaction.

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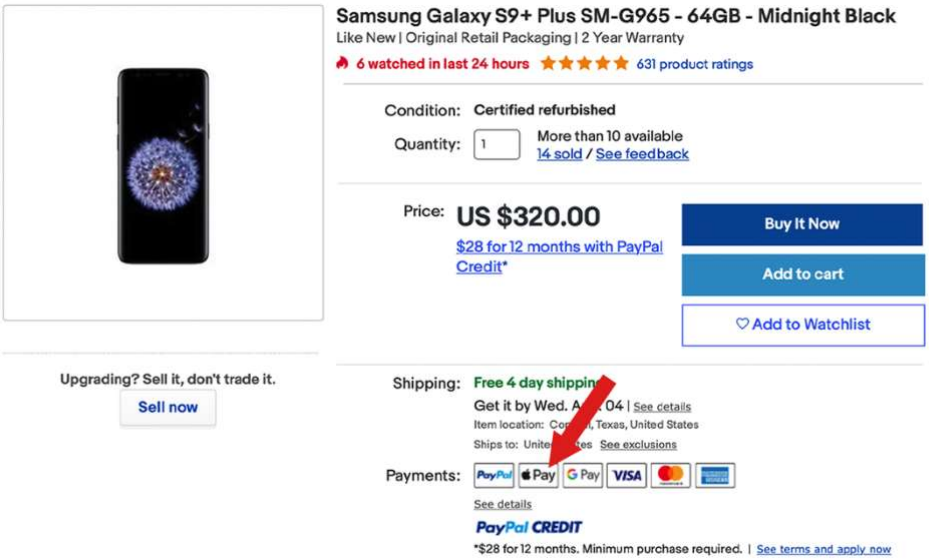
[57] *See* Gene Munster, David Stokman, "Apple Pay Availability Growing 20% Plus," LOUP (Nov. 5, 2020), https://loupfunds.com/apple-pay-availability-growing-20-plus/.

[58] Apple requires that digital goods purchased within an app be processed through Apple's in-app billing service, with Apple retaining a fee. Apple's in-app billing service for digital goods is, to Plaintiffs' knowledge, separate from Apple Pay.

[59] Apple Pay can also be used on a Mac, provided it has Apple's fingerprint recognition feature known as Touch ID.



94. If the consumer selects Apple Pay to complete the transaction, the issuer of the card is required to pay Apple Pay's transaction fees. But if the user were to select a Google Pay or PayPal digital wallet equipped with the same card, or pay with the card itself, that same issuer would pay no such transaction fee. Because of this disparity, many issuers that enable their cards for tap-and-pay payments (for which Apple Pay is the only choice) would find it economically beneficial to disable Apple Pay for online or in-app transactions on the same cards.

95. Apple deprives issuers of this choice. If issuers want to enable their cards for Tap-and-Pay iOS Mobile Wallets—where Apple has foreclosed competition to secure a monopoly—they must also enable their cards for Apple Pay e-commerce transactions (both online and in-app). In short, Apple is using its monopoly in one market—the Tap-and-Pay iOS Mobile Wallets market—to extract rents in another.

96. Absent this bundling of services, issuers would still be harmed by Apple's monopoly and supracompetitive fees in the Tap-and-Pay iOS Mobile Wallets Market, but they could evade those fees in the separate e-commerce market by disabling Apple Pay for e-commerce transactions. Exercising its monopoly power, Apple closed that door.

G. Apple's Conduct Harms Not Only Card Issuers, But Also Consumers and Competition as a Whole.

1. Apple Charges Issuers Supracompetitive Fees on Apple Pay Transactions.

97. Having foreclosed all would-be competitors in the market for Tap-and-Pay iOS Mobile Wallets, Apple charges card issuers fifteen basis points (0.15%) on credit card transactions, and 0.5 cents ($0.005) on debit transactions. Apple charges these fees even though payment networks handle virtually all aspects of an Apple Pay transaction. The networks verify the account numbers provided by Apple Pay users, the networks create a token for the account number and transmit it to Apple; and, when a payment is initiated on Apple Pay, the networks verify the transaction by communicating with the card issuer. Apple's role is basically limited to storing account tokens and transmitting them to the merchant through the NFC interface.

98. Facing competition in the Tap-and-Pay iOS Mobile Wallets Market, Apple would not be able to sustain its credit or debit transaction fees. The Android tap-and-pay mobile market is case in point. There, NFC technology is open to all comers, and Google Pay and Samsung Pay compete to provide tap-and-pay solutions. In this more competitive market, neither Google Pay nor Samsung Pay charge issuers, or anyone else, a fee for tap-and-pay transactions. If either of these solutions (or others) were permitted to access the NFC interface on iOS, they would attract issuers and users and pose a competitive threat to Apple Pay. This would drive Apple Pay's fees down to the competitive level.

2. Apple's Monopoly Stifles Innovation and Market Alternatives.

99. The absence of competitors in the Tap-and-Pay iOS Mobile Wallets Market minimizes Apple's incentives to innovate Apple Pay to better serve the needs of users, merchants and participating issuers and acquirers. In a competitive Tap-and-Pay iOS Mobile Wallets Market, providers would compete across a range of dimensions to differentiate their apps and win market share.

100. We see this in the Android market. There, issuers themselves can create their own tap-and-pay digital wallets that, unlike Apple Pay, are directly integrated into the user's banking app and all its functionality, including the ability to check account balances and transfer funds. Barclays

has done so. Issuer apps can also offer security advantages, as analysts have observed, because issuers "are able to tightly manage the security of the solution and the customer experience."[60]

101. Samsung has likewise differentiated its Android tap-and-pay service by innovating new functionality. Unlike Google Pay, which relies exclusively on NFC technology, Samsung Pay also features a Magnetic Secure Transmission ("MST") technology that mimics a card swipe and can be used on older terminals without an NFC interface. This has allowed Samsung Pay to be used at terminals that would not accept either Google Pay or Apple Pay—a benefit to both users and issuers.

102. In a more competitive Tap-and-Pay iOS Mobile Wallets Market, these and other innovations would be expected to emerge. By foreclosing competition, Apple has stifled that innovation to the detriment of both Apple Pay users and issuers. Apple has also dampened the incentives of Google Pay and Samsung Pay to innovate because, without access to the NFC interface on iOS devices, they do not stand to gain market share from Apple.

3. By Foreclosing Competition, Apple Depresses Output.

103. Apple's monopolization of the Tap-and-Pay iOS Mobile Wallets Market also depresses output. When a monopolist imposes supracompetitive prices—as here—the quantity that purchasers are willing to purchase declines, even if there are no available substitutes. This is known as own-price elasticity of demand. In the context of Apple Pay, the output restriction manifests with the card issuers that pay the fees. If Apple were to reduce its fees to issuers (or eliminate them, as in the Android market), even more issuers would enable their cards for a Tap-and-Pay iOS Mobile Wallet, thereby increasing output.

104. Fewer issuers participating in the Tap-and-Pay iOS Mobile Wallets Market also means fewer users—particularly users with accounts at nonparticipating financial institutions. Furthermore, given the cross-platform network externalities in this multi-sided market, the reduction in the number of users and issuers also reduce the value of the platform to merchants and acquirers that facilitate Apple Pay and digital wallets more generally. Fewer issuers and users therefore also

[60] *See* "Payments Security White Paper," (July 13, 2015), at 24, https://cba.ca/Assets/CBA/Documents/Files/Article%20Category/PDF/misc-2015-paymentssecurity-whitepaper-en.pdf.

reduce the incentives of merchants to accept Tap-and-Pay iOS Mobile Wallets. The combined effect is even fewer transactions overall, that is, less output.

H. Apple Cannot Justify Its Conduct as Serving Any Procompetitive End.

105. Apple also cannot legitimately contend that restricting NFC technology to itself protects the security of its devices and users. The reality is that Apple already gives third-party app developers access to NFC for a variety of purposes, as addressed above (*see supra* Section V.C). It can be integrated into third-party apps to allow users to scan coupons in store, track inventory, view museum tags, and even open their locked hotel-room doors. Apple only restricts access to NFC to those developers who wish to use it to create apps that might compete with Apple Pay by providing tap-and-pay functionality.

106. Apple also allows merchants, who do not threaten Apple Pay's market power, to access its NFC interface. In February 2022, Apple announced technology that will "empower millions of merchants" to accept payments on iPhones using Apple's NFC interface.[61] With this technology, merchants can prompt customers to hold their iPhone or Apple Watch near the merchant's iPhone, and the payment will be made via NFC. Far from claiming that this vast expansion of NFC access will undermine security, Apple contends that this new functionality will "provide businesses with a secure, private, and easy way to accept contactless payments and unlock new checkout experiences using the power, security, and convenience of iPhone."[62]

107. Apple has also championed Apple Pay as being more secure than card payments because, when a card is accessed through Apple Pay, the card number is tokenized. In other words, the card number itself is not used for purposes of clearing the transaction through Apple Pay; rather, a token number is used that theoretically cannot be traced back to the account holder by any third party. According to Apple, this means that "your card number is never stored on your device or on

[61] *See* "Apple empowers businesses to accept contactless payments through Tap to Pay on iPhone," (Feb. 8, 2022), https://www.apple.com/newsroom/2022/02/apple-unveils-contactless-payments-via-tap-to-pay-on-iphone/.

[62] *Id.*

Apple servers . . . [a]nd when you pay, your card numbers are never shared by Apple with merchants."[63]

108. But these claims, even if true, do not justify restricting NFC technology to Apple Pay and denying access to all rivals. Both Google Pay and Samsung Pay already use tokenization, and the technology is certainly not out of reach to other would-be competitors. Apple does not create the token numbers. The payment networks do.

109. Nor is there any reason to believe that Apple Pay would be more secure than rival Tap-and-Pay iOS Digital Wallets in a competitive market. Apple Pay has been the subject of serious security breaches. In 2015, the New York Times reported "unusually high fraud rates from thieves using stolen credit numbers on Apple Pay."[64] This was enabled by Apple Pay's lax verification process, which, to facilitate "frictionless" signups, allowed users to enable new cards (including stolen ones) within Apple Pay while requiring "little beyond basic credit card information about a user."[65] This led to a fraud rate on Apple Pay that exceeded traditional credit cards, and a "thriving black market in which thieves enter stolen credit card numbers into iPhones, essentially turning the devices into physical credit cards, which they in turn take to stores and walk out with merchandise," reported the New York Times.[66] Later in 2021, researchers showed that thieves could trick an iPhone into believing it was interacting with a transit terminal, and extract a £1000 payment without the user unlocking the phone or authorizing the charge.[67]

110. Competing Tap-and-Pay iOS Digital Wallets could innovate to prevent these security breaches, and indeed some already have. For example, the researchers who hacked iPhones to make

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[63] *See* https://www.apple.com/apple-pay/ (last accessed Oct. 28, 2022).

[64] *See* Andrew Ross Sorkin, "Pointing Fingers in Apple Pay Fraud," NEW YORK TIMES: DEALBOOK (Mar. 16, 2015), https://www.nytimes.com/2015/03/17/business/banks-find-fraud-abounds-in-apple-pay.html.

[65] *Id.*

[66] *Id.* Apple's market power exacerbated this security threat because, as the New York Times reported, bank executives were concerned that if they raised concerns "they would not be included among the initial issuers on Apple Pay." *Id.*

[67] *See* "Researchers find Apple Pay, Visa contactless hack," BBC NEWS (Sep. 30, 2021), https://www.bbc.co.uk/news/technology-58719891.

unauthorized £1000 payments "also tested Samsung Pay, but found it could not be exploited in this way."[68]

111. Even if some security features of Apple Pay were essential to protect the iOS ecosystem as a whole—something Apple has never shown—that security objective could be met by other less restrictive means. There is no need to block competitor access to NFC technology entirely, and thereby eliminate all competition in the market for Tap-and-Pay iOS Mobile Wallets.

I. European Regulators Have Preliminarily Concluded That Apple Has Abused Its Dominant Position in the Market for Mobile Wallets on iOS Devices.

112. In June 2020, the European Commission ("EC") initiated an investigation into Apple Pay concernig, among other things, "Apple's limitation of access to Near Field Communication ('NFC') technology embedded on iOS smart mobile devices to Apple Pay only."[69] On May 2, 2022, the EC issued a "Statement of Objections,"[70] informing Apple of its preliminary view that Apple, by restricting the NFC interface, violated European competition law.

113. Among other preliminary findings, the EC stated that "Apple enjoys significant market power in the market for smart mobile devices and a dominant position on mobile wallet markets."[71] The EC stated that it "takes issue with the decision by Apple to prevent mobile wallets app developers, from accessing the necessary hardware and software ('NFC input') on its devices, to the benefit of its own solution, Apple Pay."[72] The EC's preliminary conclusion is that Apple's

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[68] *Id.*

[69] *See* "Statement of Objections," European Commission, https://ec.europa.eu/competition/antitrust/cases1/202221/AT_40452_7174940_1000_10.pdf (last accessed Oct. 28, 2022).

[70] EC guidance provides that "[a] Statement of Objections is a formal step in Commission investigations into suspected violations of EU antitrust rules. The Commission informs the parties concerned in writing of the objections raised against them. The addressees can examine the documents in the Commission's investigation file, reply in writing and request an oral hearing to present their comments on the case before representatives of the Commission and national competition authorities. Sending a Statement of Objections and opening of a formal antitrust investigation does not prejudge the outcome of the investigations." *See* European Commission, *supra* note 41.

[71] *See id.*

[72] *Id.*

restriction of NFC technology "has an exclusionary effect on competitors and leads to less innovation and less choice for consumers for mobile wallets on iPhones."[73]

114. The EC's Statement of Objections triggers a formal investigation that will now proceed.

115. The Dutch competition authority—the Netherlands Authority for Consumers and Markets ("ACM")—has likewise concluded that because of Apple's restrictions on the NFC interface "consumers and retailers have fewer methods of payment to choose from."[74] The ACM's investigation "revealed that access to NFC technology (Near Field Communication) is an important prerequisite for market participants to invest in the development of payment apps of their own."[75] Because Apple has restricted access to NFC, ACM found, market participants "have not started developing … payments apps of their own."[76]

116. ACM initiated its investigation under the European Interchange Fee Regulation (IFR) and ultimately concluded that this regime is not suitable for redressing the agency's "anticompetitive concerns."[77] ACM called for additional European interchange rules and noted the EC's ongoing investigation into the same Apple conduct was being conducted under separate "competition rules."[78]

V. INTERSTATE TRADE AND COMMERCE

117. The activities of Apple as alleged in this amended complaint were within the flow of, and substantially affected, interstate commerce. Apple markets and provides Apple Pay services across, and without regard to, state lines.

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[73] *Id.*

[74] *See* "Closure of the investigation into payment apps confirms need for new rules," Netherlands Authority for Consumers & Markets, https://www.acm.nl/en/publications/closure-investigation-payment-apps-confirms-need-new-rules (last accessed Oct. 28, 2022).

[75] *Id.*

[76] *Id.*

[77] *Id.*

[78] *Id.*

VI. RELEVANT MARKETS

A. Relevant Product Markets

1. Relevant Product Markets For Smartphones, Tablets, and Smart Watches

118. As addressed *supra* at Section V.A, there are relevant product markets for smartphones, tablets, and smart watches. Each of these products serves a distinct purpose, and is marketed to serve a distinct purpose.

119. **Smartphone Product Market.** Smartphones provide phone functionality coupled with on-the-go internet, email, and text capabilities. Smartphones are further enhanced by a range of apps preloaded and loadable onto the devices, which give smartphones enormous versatility. They can be used to navigate a city, buy tickets to the opera, play games, track spending, take and store pictures, or read the news, among an almost endless variety of things.

120. Characterized by their small size and portability, smartphones can be used virtually anywhere users take them, and stowed away in users' pockets. The vast majority of adults in the U.S.—upwards of 85%—own a smartphone. This ubiquitous usage reflects the absence of reasonably close substitutes for smartphones.

121. **Tablet Product Market**. Tablets bear certain smartphone features, but they function as a complement rather than a substitute for smartphones. Indeed, when the first tablet was launched in 2010—Apple's iPad—it was marketed as a "third category of device," distinct from smartphones and laptops."[79]

122. Screen size is a primary differentiator. With a larger screen (up to 17 inches) the tablet is less mobile than a smartphone. It can be ported, but not stowed in a pocket. And because of the larger screen, certain apps are available only for tablets, which provide a more immersive viewing experience. Tablets also do not always have cellular connectivity, and thus the ability to use text and phone on the move. Tablets also offer the user more productivity and office related functionality, particularly with a keyboard add-on allowing the user to edit documents.

[79] *See* Gallagher, *supra* note 9.

123. **Smart Watch Product Market**. Smart watches are a distinct product with a distinct purpose. The primary distinguishing trait is that smart watches are wearable, and they provide functionality derived from their proximity to the body. Most prominently, smart watches offer (and are marketed to offer) various fitness and health related functions, from tracking steps to the users' heartrate and sleep patterns.

124. The small interface on smart watches streamlines the functions they can provide. Web browsing is limited, and sometimes nonexistent, on smart watches. For many smart watches, texting and phone usage require that the watch be paired with a smartphone or other cellular-enabled device. Smart watches do not replace smartphones or tablets. They are used for other, complementary purposes. There are no reasonably close substitutes for smart watches.

2. Relevant Product Market for Tap-and-Pay iOS Mobile Wallets

125. As addressed *supra* at Section V.D.1, there is a relevant antitrust market for Tap-and-Pay iOS Mobile Wallets. These wallets provide a distinct service and offer distinct features that differentiate them from other modes of payments.

126. Android wallets cannot offer tap-and-pay functionality on iOS devices, and the cost of digital wallet transactions for card issuers is unlikely to induce switching between iOS and Android devices either by consumers or by card issuers. Contactless cards are less secure than Apple pay and, for many consumers, less convenient. With a population of consumers loyal to Apple Pay, issuers cannot drop the service in hopes of shifting demand to payment cards. For these, and other reasons (*see supra* at Section V.D.1), none of these payment options is a reasonably close substitute for Apple Pay.

127. The lack of substitution is evident from the sustained pricing differential across these payment platforms. That is, other forms of payment manifestly do not constrain Tap-and-Pay iOS Mobile Wallets because Apple Pay has imposed and sustained a substantial price premium on issuers relative to a competitive price for mobile wallet transactions, without any measurable shift in demand to other payment options. Far from dropping Apple Pay, every year more and more issuers are enabling their cards for use on the platform, absorbing Apple's supracompetitive fees.

128. In addition, by preventing issuers from differentially pricing Apple Pay transactions and other mobile wallet transactions, Apple has ensured that consumers are indifferent to the prices Apple Pay charges. Consumers therefore do not take into consideration the cost or amount of using Apple Pay when they purchase mobile devices. Apple can charge issuers supracompetitive fees, knowing that demand on the consumer side will be perfectly inelastic to the price Apple charges on the issuer side.

129. By barring competitors from accessing the NFC interface needed to offer Tap-and-pay functionality on iOS devices, Apple Pay has monopolized the Tap-and-Pay iOS Mobile Wallets Market. Apple Pay's market share is 100 percent.

B. Relevant Geographic Market

130. There is a relevant U.S. geographic market for all products identified in this amended complaint—namely (a) smartphones, tablets, and smart watches and (b) Tap-and-Pay iOS Mobile Wallets.

VII. STANDING AND ANTITRUST INJURY

131. Plaintiffs have entered into written agreements with Apple in which they agree to directly purchase from Apple Tap-and-Pay iOS Mobile Wallet services. The terms of those agreements require the Plaintiffs to pay supracompetitive prices to Apple for the services they purchase (*i.e.*, 15 basis points (0.15%) × the transaction amount for credit card transactions and 0.5 cents ($0.005) per debit card transaction). If Apple did not prevent other mobile wallet app developers from offering Tap-and-Pay iOS Mobile Wallet services to Apple iOS device owners, Apple would be unable to charge supracompetitive fees. And, if Apple attempted to do so, the Plaintiffs and others would purchase the lower-priced service that could be offered by competing mobile wallet service providers to Apple iOS device owners.

132. Plaintiffs have also been forced to directly agree in writing with Apple that (1) they will not impose a charge on their cardholders to cover or recoup the cost of the cardholders using the Apple Tap-and-Pay iOS Mobile Wallet services and (2) in order to obtain tap-and-pay functionality for their payment cards, they will allow their cardholders to use Apple Pay to execute e-commerce transactions even though the Tap-and-pay functionality of the NFC chip is not used to execute e-

commerce transactions. If the Plaintiffs could utilize the power of price transparency for Apple Pay ecommerce transactions or refuse to purchase e-commerce transaction services from Apple, Apple would be unable to charge its supracompetitive fees for the execution of e-commerce transactions.

133. The injury that Plaintiffs suffer by virtue of alternative Tap-and-Pay iOS Mobile Wallet services being excluded from Apple iOS devices (*i.e.*, the supracompetitive fees paid by the Plaintiffs to Apple) is an injury that Apple specifically intends to inflict on the Plaintiffs and is the mechanism, along with price restraints, by which Apple extracts monopoly rents from its anticompetitive scheme. The injury to the Plaintiffs due to the exclusion of competing Tap-and-Pay iOS Mobile Wallets from Apple iOS devices is foreseeable and, in fact, was foreseen and intended by Apple. The injury, suffered by the Plaintiffs, is exactly the kind of injury the antitrust laws are intended to prevent and is proximately caused by the anticompetitive conduct alleged herein.

134. In order for an Apple iOS device owner to be able to use Tap-and-Pay iOS Mobile Wallet services, the financial institution that issued a payment card to that device owner must be able to access the Apple Tap-and-pay Mobile Wallet. Apple denies both the card issuer and the iOS device owner competitive choice as to which tap-and-pay mobile wallet to use or promote by preventing such competing tap-and-pay mobile wallet apps from being functionally available for use on iOS devices. Although both the card issuer and the consumer are denied competitive choice and the benefits of innovation that would result from competitive choice, the card issuer bears the supracompetitive increase in price that results from the exclusion of competing Tap-and-Pay iOS Mobile Wallet apps. Apple imposes the entirety of the supracompetitive overcharge that results from its anticompetitive conduct on the financial institutions that issue payment cards to iOS device owners. The iOS device owner bears no portion of the supracompetitive fees charged by Apple and no party other than Plaintiffs and other financial institutions that issue the payment cards to the Apple iOS device owners suffers injury by having to pay the anticompetitive overcharges.

135. The injury imposed on the Plaintiffs is an integral part of Apple's anticompetitive scheme. It is directly related to and caused by Apple's anticompetitive conduct and is the mechanism by which Apple obtains an anticompetitive reward for its unlawful conduct. The Plaintiffs' injury is inextricably intertwined with the injury Apple imposes on the Apple iOS device

owner who is also denied a competitive choice of Tap-and-Pay iOS Mobile Wallets by Apple as a means of extracting monopoly rents from the financial institutions that issue payment cards to the Apple iOS device owners. The injury to the Plaintiffs is the means by which Apple has sought to achieve its anticompetitive ends and is a necessary step in effectuating its illegal scheme.

136. The Plaintiffs are injured by Apple's conduct because Apple has excluded other Tap-and-Pay iOS Mobile Wallet apps from functioning on the Apple iOS devices. Having excluded all competitive Tap-and-Pay iOS Mobile Wallet apps from its iOS devices, and removed the sole competitive check that could temper Apple's conduct, i.e., hiding the price difference between Apple Pay and other mobile wallets from cardholders, Apple is able to impose supracompetitive prices on the Plaintiffs in order for the Plaintiffs to satisfy the demand of their cardholders who own Apple iOS devices for Tap-and-pay Mobile Wallet services.

137. The elimination by Apple of competition from other Tap-and-Pay iOS Mobile Wallet apps is not speculative. To the contrary, it is an existing fact that has already occurred. Similarly, the supracompetitive price that Plaintiffs are forced to pay as a result of Apple's anticompetitive conduct is not speculative. As shown by the tap-and-pay mobile wallet services offered to Google Android device owners, when alternative tap-and-pay mobile wallet service apps are allowed to freely function with mobile devices, the competitive price that is charged to financial institutions, such as the Plaintiffs, to connect their cardholders to tap-and-pay mobile wallet functionality is $0.

138. There is no risk that allowing the Plaintiffs to sue for the overcharges that they have suffered at the hands of Apple will or could result in Apple being subject to double recovery. The only entities that directly pay the overcharges in question to Apple are the Plaintiffs and the other class members. For that reason, there is no need to apportion any recovery of the overcharge damages among different classes of claimants. The only class of claimant that has any legal right to recover the anticompetitive overcharges alleged herein are Plaintiffs and the class they seek to represent.

VIII. CLASS ALLEGATIONS

139. Plaintiffs bring this proposed class action for damages and injunctive relief pursuant to Fed. R. Civ. P. 23(b)(1), (2), and (3).

140. Plaintiffs bring this action on their own behalf and on behalf of the following class:

> All U.S. entities that (a) issued any Payment Card enabled for Apple Pay and (b) paid Apple a fee for any Apple Pay transaction on that Payment Card.

141. For purposes of the Class Definition, a "Payment Card" is any physical card, digital card, virtual card, or other payment device capable of accessing an account from which payments can be made. The term "Payment Card" includes, without limitation, credit cards, debit cards, prepaid cards, transit cards, and any other cards linked to a depository account.

142. Excluded from the proposed class are the defendants; defendants' affiliates and subsidiaries; defendants' current or former employees, officers, directors, agents, and representatives; the district judge or magistrate judge to whom this case is assigned, as well as those judges' immediate family members; and all governmental entities.

143. **Numerosity:** The exact number of the members of the proposed class is unknown and is not available to the Plaintiffs at this time, but upon information and belief, the class will consist of many thousands of members such that individual joinder in this case is impracticable. Apple publishes a list of financial institutions participating in Apple Pay. That list contains more than 4,000 banks and credit unions.[80]

144. **Commonality:** Numerous questions of law and fact are common to the claims of the Plaintiffs and members of the proposed class. These include, but are not limited to:

a. Whether Apple has unlawfully tied Apple Pay to the purchase of its mobile devices—including iPhone, iPad and Apple Watch—by precluding third parties from offering tap-and-pay functionality on those devices with NFC technology, and thereby requiring that Apple Pay be used Tap-and-Pay iOS Mobile Wallet transactions;

b. Whether there is an antitrust market (or submarket or aftermarket) for Tap-and-Pay iOS Mobile Wallets;

c. Whether Apple unlawfully monopolized, or attempted to monopolize, a market for Tap-and-Pay iOS Mobile Wallets;

[80] *See* https://support.apple.com/en-us/HT204916 (last accessed Oct. 28, 2022).

d. Whether competition in the market for Tap-and-Pay iOS Mobile Wallets has been constrained or harmed by Apple's tying, monopolization, or attempted monopolization conduct of such markets;

e. Whether issuers have been harmed, including by way of having paid more for Tap-and-Pay iOS Mobile Wallet services than they would have but for Apple's allegedly anticompetitive conduct;

f. Whether Plaintiffs and members of the proposed class are entitled to declaratory or injunctive relief to halt Apple's unlawful practices, and to their attorney fees, costs, and expenses; and

g. Whether Plaintiffs and members of the proposed class are entitled to any damages or restitution incidental to the declaratory or injunctive relief they seek, or otherwise, and to their attorney fees, costs, and expenses related to any recovery of such monetary relief.

145. **Typicality:** Plaintiffs' claims are typical of the claims of the members of the proposed class. The factual and legal bases of Apple's liability are the same and resulted in injury to Plaintiffs and all of the other members of the proposed class.

146. **Adequate representation:** Plaintiffs will represent and protect the interests of the proposed class both fairly and adequately. Plaintiffs have retained counsel competent and experienced in complex class-action litigation. Plaintiffs have no interests that are antagonistic to those of the proposed class, and its interests do not conflict with the interests of the proposed class members it seeks to represent. Class counsel have been investigating the claims asserted in this amended complaint since August 2021, have invested substantial resources developing these claims, and are qualified and best positioned to lead the representation of the proposed class.

147. **Prevention of inconsistent or varying adjudications:** If prosecution of myriad individual actions for the conduct complained of were undertaken, there may be inconsistent or varying results. This would have the effect of establishing incompatible standards of conduct for the Defendants. Certification of Plaintiffs' proposed class would prevent these undesirable outcomes.

148. **Injunctive and declaratory relief:** By way of its conduct described in this amended complaint, Apple has acted on grounds that apply generally to the proposed class. Accordingly, final injunctive relief or corresponding declaratory relief is appropriate respecting the class as a whole.

149. **Predominance and superiority:** This proposed class action is appropriate for certification. Class proceedings on these facts and this law are superior to all other available methods for the fair and efficient adjudication of this controversy, given that joinder of all members is impracticable. Even if members of the proposed class could sustain individual litigation, that course would not be preferable to a class action because individual litigation would increase the delay and expense to the parties due to the complex factual and legal controversies present in this matter. Here, the class action device will present far fewer management difficulties, and it will provide the benefit of a single adjudication, economies of scale, and comprehensive supervision by this Court. Further, uniformity of decisions will be ensured.

IX. CLAIMS FOR RELIEF

FIRST CAUSE OF ACTION: VIOLATION OF THE SHERMAN ACT – TYING THE TAP-AND-PAY IOS MOBILE WALLETS MARKET TO IOS MOBILE DEVICE MARKETS (15 U.S.C. §§ 1, 3)

150. Plaintiffs repeat and re-alleges every allegation above as if set forth herein in full.

151. Apple has unlawfully tied Apple Pay to its mobile devices, including iPhone, iPad, and Apple Watch.

152. demonstrated herein, Apple Pay is a product in the Tap-and-Pay iOS Mobile Wallet Market. The Tap-and-Pay iOS Mobile Wallet Market is a multi-sided market. This market is distinct from the relevant markets for Apple's mobile devices—the smartphone, tablet and smart watch markets. Apple's unlawful tying arrangement thus ties two separate products that are in separate markets.

153. Apple exercises market power in the mobile device markets for smartphones, tablets and smart watches.

154. Apple coerces iOS consumers to purchase Apple Pay's tap-and-pay mobile services. Apples Pay is preinstalled on iOS devices, and Apple conditions consumers' use of their iOS devices on their agreement to its Apple Pay terms and conditions. Consumers do not agree to use Apple Pay

exclusively for tap-and-pay mobile wallet payments. Instead, Apple coerces consumers' exclusive use of Apple Pay by excluding would-be Apple Pay rivals from accessing the NFC interface required for tap-and-pay functionality on the iOS devices.

155. Apple's conduct forecloses competition in the Tap-and-Pay iOS Mobile Wallets Market. Given the volume of transactions and the money at issue, Apple's conduct affects a substantial volume of commerce in that market.

156. Apple has thus engaged in a *per se* illegal tying arrangement.

157. In the alternative only, even if Apple's tying conduct does not constitute a *per se* violation of the law, a rule-of-reason analysis of Apple's tying arrangement also would demonstrate that it violates the law.

158. There is no valid business necessity or pro-competitive justification for Apple's tying conduct.

159. Plaintiffs and the class have been injured, and will continue to be injured, in their businesses and property as a result of Apple's conduct, including by way of overpaying for Tap-and-Pay iOS Mobile Wallet services.

160. Plaintiffs and members of the putative class have suffered and continue to suffer damages and irreparable injury, including ongoing harm to their businesses, and such damages and injury will not abate until the Court issues an injunction ending Apple's anticompetitive conduct issues.

SECOND CAUSE OF ACTION:
VIOLATION OF THE SHERMAN ACT – MONOPOLIZATION OF TAP-AND-PAY IOS MOBILE WALLET MARKET
(15 U.S.C. § 2)

161. Plaintiffs repeat and re-allege every allegation above as if set forth herein in full.

162. Apple possesses monopoly power in the market or aftermarket for Tap-and-Pay iOS Mobile Wallets payments. Alternatively, Apple possesses monopoly power in a market that includes, inter alia, Apple Pay and mobile point-of-sale payments.

163. For the reasons stated herein, Apple has erected substantial barriers to entry and expansion in the Tap-and-Pay iOS Mobile Wallets Market.

164. Apple has the power to exclude competition in the Tap-and-Pay iOS Mobile Wallets Market, and it has willfully used that power, including by way of its unlawful practices in restraint of trade as described herein, in order to achieve, maintain, and expand its monopoly power in that market.

165. Furthermore, in order to willfully obtain, maintain, and enhance its monopoly power in the market or aftermarket for Tap-and-Pay iOS Mobile Wallets, Apple has tied Apple Pay to its iOS mobile devices, including its iPhone, iPads, and Watch. Consumers of these devices are given no option and are coerced to use Apple Pay for tap-and-pay mobile wallet transactions.

166. Furthermore, in an exercise of its monopoly market power in the market or aftermarket for Tap-and-Pay iOS Mobile Wallets, Apple has required that issuers enabling their payment cards for tap-and-pay transactions also enable those cards for Apple Pay transactions in e-commerce.

167. Apple's conduct as described herein, including its unlawful practices in restraint of trade, is exclusionary vis-à-vis potential rivals in the market or aftermarket for Tap-and-Pay iOS Mobile Wallets Market and in e-commerce.

168. Apple has behaved as alleged herein to achieve, maintain, and grow its monopoly in the market or aftermarket for Tap-and-Pay iOS Mobile Wallets Market, with the effect being that competition is foreclosed and that consumer and issuer choice is diminished. So is innovation. Additionally, Apple has abused its market power by imposing supracompetitive issuer fees on tap-and-pay and e-commerce transactions. Further, Apple's actions have depressed output as alleged herein.

169. There is no valid business necessity or pro-competitive justification for Apple's conduct. Instead, Apple's actions are designed to destroy competition as alleged herein.

170. Plaintiffs and the class have been injured, and will continue to be injured, in their businesses and property as a result of Apple's conduct, including by way of paying supracompetitive transactions fees.

171. Moreover, Plaintiffs and the class are entitled to an injunction to prevent Apple from persisting in its unlawful behavior to their detriment, including the harm that its behavior is causing to their businesses.

THIRD CAUSE OF ACTION:
VIOLATION OF THE SHERMAN ACT – ATTEMPTED MONOPOLIZATION OF TAP-AND-PAY IOS MOBILE WALLETS MARKET (15 U.S.C. § 2)

172. Plaintiffs repeat and re-alleges every allegation above as if set forth herein in full.

173. Apple has attempted to monopolize the market or aftermarket for Tap-and-Pay iOS Mobile Wallets. Alternatively, Apple possesses monopoly power in a market that includes, inter alia, Apple Pay and other mobile point-of-sale payments.

174. Apple's anticompetitive conduct has created a dangerous probability that it will achieve monopoly power in the relevant market or aftermarket described above.

175. Apple has a specific intent to achieve monopoly power in the relevant market or aftermarket described above.

176. Apple has the power to exclude competition in the Tap-and-Pay iOS Mobile Wallets Market, and it has willfully used that power, including by way of its unlawful practices in restraint of trade as described herein, in an attempt to achieve, maintain, and expand its monopoly power in that market.

177. Apple's conduct as described herein, including its unlawful practices in restraint of trade, is exclusionary vis-à-vis its rivals in the market or aftermarket for Tap-and-Pay iOS Mobile Wallets.

178. Apple has behaved as alleged herein in a willful attempt to obtain a monopoly in the market or aftermarket for Tap-and-Pay iOS Mobile Wallets, with the effect being that competition is foreclosed and that consumer choice is gravely diminished. So is innovation. Additionally, Apple has abused its market power by imposing supracompetitive issuer fees on tap-and-pay and e-commerce transactions. Further, Apple's actions have depressed output as alleged herein.

179. There is no valid business necessity or pro-competitive justification for Apple's conduct.

180. Plaintiffs and the class have been injured, and will continue to be injured, in their businesses and property as a result of Apple's conduct, including by way of paying supracompetitive transactions fees on mobile point-of-sale payments.

181. Moreover, Plaintiffs and the class are entitled to an injunction to prevent Apple from persisting in its unlawful behavior to their detriment, including the harm that its behavior is causing to their businesses.

PRAYER FOR RELIEF

WHEREFORE, Plaintiffs respectfully request the following relief:

A. That the Court certify this case as a class action and that it appoint Plaintiffs as class representatives and their counsel as class counsel;

B. That the Court award Plaintiffs and the proposed class all appropriate relief, to include, but not be limited to, injunctive relief requiring that Apple cease the abusive, unlawful, and anticompetitive practices described herein; declaratory relief, adjudging such practices unlawful; as well as monetary relief, whether by way of restitution or damages, including treble damages, or other multiple or punitive damages, or restitution, where mandated by law or equity or as otherwise available; together with recovery of the costs of suit, to include reasonable attorneys' fees, costs, and expenses, together with pre- and post-judgment interest to the maximum levels permitted by law or equity.

C. That the Court grant such additional orders or judgments as may be necessary to prevent the unlawful practices complained of herein; and

D. That the Court award Plaintiffs and the proposed class such other, favorable relief as may be available and appropriate under federal or state law, or at equity.

JURY TRIAL DEMANDED

Plaintiffs demand a trial by jury on all claims so triable.

DATED: October 28, 2022

Respectfully submitted,

HAGENS BERMAN SOBOL SHAPIRO LLP

By */s/ Ben M. Harrington*
Ben M. Harrington (SBN 313877)
715 Hearst Avenue, Suite 202
Berkeley, CA 94710
Telephone: (510) 725-3000
Facsimile: (510) 725-3001
benh@hbsslaw.com

Steve W. Berman (*pro hac vice*)
1301 Second Avenue, Suite 2000
Seattle, WA 98101
Telephone: (206) 623-7292
Facsimile: (206) 623-0594
steveb@hbsslaw.com

SPERLING & SLATER, P.C.
Eamon P. Kelly (*pro hac vice*)
Joseph M. Vanek (*pro hac vice*)
Jeffrey H. Bergman (*pro hac vice*)
55 W. Monroe Street, 32nd Floor
Chicago, IL 60603
Telephone: (312) 676-5845
Facsimile: (312) 641-6492
ekelly@sperling-law.com
jvanek@sperling-law.com
jbergman@sperling-law.com

Attorneys for Plaintiffs and the Proposed Class